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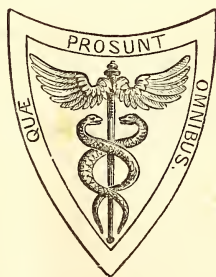
THE
AMERICAN JOURNAL

OF THE
MEDICAL SCIENCES.

EDITED BY
ISAAC HAYS, M.D.,
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&c. &c. &c.

NEW SERIES.

VOL. VIII.



PHILADELPHIA:
LEA & BLANCHARD.
LONDON:
WILEY & PUTNAM, AND JOHN MILLER.

.....
1844.

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TO READERS AND CORRESPONDENTS.

The communications of Professors J. C. Warren and W. L. Atlee, and of Drs. Watson, Tabb, and Hildreth, shall appear in our next No.

The following works have been received:—

Anatomie et Physiologie du Système Nerveux de l'homme et des animaux Vertébré; ouvrage contenant des observations pathologiques-relations au système Nerveux et des expériences sur les animaux des classes supérieures; Par F. A. LONGET, Lauréat de l'Institut de France, D. M. P. Prof. d'Anat. et de Physiologie, &c. &c. Paris. Fortin, Masson & Co: 1842. 2 vols. 8vo. (From the publishers.)

Traité complet de l'anatomie, de la physiologie et de la pathologie du système nerveux cerebro-spinal. Par M. FOVILLE, Medecin en chef de la Maison royale de Charenten, &c. &c. &c. 1re. Partie Anatomie avec un atlas de xxiii planches. Paris: Fortin, Masson & Co. 1844. (From the publishers.)

Mémoires de la Société Médicale d'Observation de Paris. Tom. II. Paris: Fortin, Masson & Co. 1844. (From the publishers.)

Traité des Phénomènes Électro-Physiologiques des animaux. Par Matteucci suivi d'études anatomiques sur le système nerveux et sur l'organe électrique de la torpille. Par PAUL SAVI. Paris: Fortin, Masson & Co. 1844. (From the publishers.)

Researches on Operative Midwifery, &c., with Plates. By FLEETWOOD CHURCHILL, M. D., Lecturer on Midwifery, &c. &c. &c. Dublin, 1841. (From the author.)

On the Principal Diseases of Females. By FLEETWOOD CHURCHILL, M. D., M. R. J. A., Lecturer on Midwifery, with Diseases of Women and Children, &c. &c. &c. Second edition. Dublin, 1844. (From the author.)

General Report of the Royal Hospitals of Bridewell and Bethlem, and of the House of Occupations, for the year ending 31st December, 1843. London, 1844. (From Dr. Webster.)

Address to the Members of the Massachusetts Medical Society. (From Dr. E. Jarvis.)

Second Annual Report to the Legislature, under the act of March, 1842, relating to the Registry and Returns of Births, Marriages and Deaths in Massachusetts, for the year ending May 1, 1843. By JOHN A. BOLLES, Secretary of the Commonwealth. Boston, 1843. (From Dr. E. Jarvis.)

A complete condensed Practical Treatise on Ophthalmic Medicine. By EDWARD OCTAVIUS HOCKEN, M. D., Physician to the Blenheim Surgical Infirmary and Dispensary, &c. &c. &c. London, 1844. (From the author.)

The Cyclopedia of Practical Medicine. Edited by Dr. FORBES. Tweedie & Conolly. (Revised by Dr. DUNGLISON.) Parts I, II, III, IV, V, VI, VII. Lea & Blanchard, 1844. (From the publishers.)

Popular Lectures on the Mechanical Nature and Physical Cure of Chronic Diseases of the Human Body. By Dr. E. P. BANNING. Boston, 1844. (From the author.)

A Practical Treatise on Midwifery. By M. CHAILLY, M. D. P., Professor of Midwifery, &c. &c., illustrated with two hundred and sixteen wood cuts. A work adopted by the Royal Council of Public Instruction. Translated from the French and edited by GUNNING S. BEDFORD, A. M., M. D., Professor of Midwifery and the Diseases of Women and Children in the University of New York. New York, 1844. (From the editor.)

Transactions of the New York State Medical Society. Vol. vi. Part I. Albany, 1844. (From the Society.)

Pathological Hæmatology. An Essay on the Blood in Disease. By G. ANDRAL, Professor of General Pathology and Therapeutics in the University of Paris. Translated from the French by J. F. MEIGS, M. D., and ALFRED STILLE, M. D. Philadelphia, Lea & Blanchard, 1844. (From the publishers.)

A Treatise on Operative Surgery; comprising a description of the various processes of the art, including all the new operations; exhibiting the state of Surgical Science in its present advanced condition; with eighty plates, containing four hundred and eighty-six separate illustrations. By JOSEPH PANCOAST, M. D., Professor of General, Descriptive and Surgical Anatomy in Jefferson Medical College, &c. &c. Philadelphia, Carey & Hart, for G. N. Loomis, 1844. (From the publishers.)

Annual Report of the Inspectors of the Mount Pleasant State Prison, to the Honourable the Legislature of the State of New York. 1844. (From Dr. T. R. Beck.)

Fifty-seventh Annual Report of the Regents of the University of the State of New York. Albany, 1844. (From Dr. T. R. Beck.)

Catalogue and Circular of the Albany Medical College. Albany, 1844. (From Dr. T. R. Beck.)

State of the Accounts of the Pennsylvania Hospital. Philadelphia, 1844.

Report of the Progress of Practical Medicine in the Departments of Midwifery and the Diseases of Women and Children, during the years 1842-3. By CHARLES WEST, M. D., Member of the Royal College of Physicians, Physician to the Royal Infirmary for Children, &c. &c. &c. (From the author.)

On the comparative value of the Preparations of Mercury and Iodine in the treatment of Syphilis. By EDWARD O. HOCKEN, M. D., &c. &c. (From the Ed. Medical and Surgical Journal, No. 159. (From the author.)

Outlines of Pathology and Practice of Medicine. By WILLIAM PULTENEY ALISON, M. D., F. R. S., &c. &c. Philadelphia, Lea & Blanchard, 1844. (From the publishers.)

The Practice of Medicine: A General Treatise on Special Pathology and Therapeutics. By ROBLEY DUNGLISON, M. D., Professor of the Institutes of Medicine, &c., in Jefferson Medical College. Second edition. Philadelphia, Lea & Blanchard, 1844: 2 vols., 8vo. (From the publishers.)

The Ethics of Medicine. An Anniversary Address, delivered April 3. 1844, before the Medico-Chirurgical Society of Louisiana. By THOMAS M. LOGAN, M. D. (Published by the Society.) New Orleans, 1844. (From the author.)

Eleventh Annual Report of the Trustees of the State Lunatic Hospital at Worcester. (From Dr. E. Jarvis.)

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Fifteenth Annual Report of the Inspectors of the Eastern State Penitentiary of Pennsylvania. Philad. 1844. (From Dr. E. Hartshorne.)

Thirty-seventh Annual Report of the state of the Asylum for the relief of persons deprived of the use of their reason. Philad. 1844. (From Dr. C. Evans.)

Introductory Lecture to the Spring Session of Lectures in Castleton Medical College. By JOSEPH PERKINS, A. M., M. D. Albany, 1844. (From the author.)

Reports of the Inspectors of the Western Penitentiary of Pennsylvania for the years 1840, 1841, 1842, and 1843, with the accompanying documents. (From Dr. Gazzam.)

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De Prolapsu Funiculi Umbilicalis. J. C. SAXTORPH. Hauniæ, 1843. (From Dr. Otto.)

De viribus et rationibus maiorum dosium Calomellis. C. J. E. HORNEMANN. Hauniae, 1839. (From Dr. Otto.)

De eventu sectionis Cæsareæ. C. KAYSER. Hauniae, 1841. (From Dr. Otto.)

Commentatio de quibusdam Americæ Meridianæ Medicamentis parum cognitis. C. OTTO. Hauniae, 1841. (From the author.)

Darstellung der Verfassung und Einrichtung der Baumwoll-Spinnerei-Fabriken in Nieder-Oesterreich. Von J. J. KNOLZ. (From Dr. Oppenheim.)

Briefe über die zwanzigste versammlung deutscher Naturforscher und Aerzte zu Mainz. Von G. L. DIETRICH. Landshut, 1842. (From Dr. Oppenheim.)

Ueber Iritis. Von F. A. VON AMMON. Berlin, 1843. (From the author.)

Medicinischer Jahresbericht von Peter-Pauls-Hospitale in St. Petersburg für das Jahr, 1840 und 1841. St. Petersburg, 1843. (From Dr. Oppenheim.)

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London Medical Gazette. Feb., March, April, May, 1844. (In exchange.)

The Medical Times. March, April, May, 1844. (In exchange.)

The Dublin Medical Press. March, April, 1844. (In exchange.)

Provincial Medical Journal. March, April, May, 1844. (In exchange.)

The British and Foreign Medical Review. April, 1844. (In exchange.)

The Edinburgh Medical and Surgical Journal. April, 1844. (In exchange.)

London and Edinburgh Monthly Journal of Medical Science. April, 1844. (In exchange.)

Revue Médicale Française et Étrangère. Journal des Progrès de la Médecine Hippocratique. Par J. B. CAYOL, ancien Professeur de Clinique Méd. à la Faculté de Méd. de Paris. Sept., Oct., Nov., Dec., 1843. (In exchange.)

Annales d'Hygiène Publique et de Médecine Légales. Oct., 1843. (In exchange.)

Gazette Médicale de Paris. Oct., Nov., Dec., 1843. Jan. 1844. (In exchange.)

La Lancette Française, Gazette des Hôpitaux Civils et Militaires. Sept., Oct., Nov., Dec., 1843. (In exchange.)

Journal des Connaissances Médico-Chirurgicales. Oct., Nov., Dec., 1843. Jan. 1844. (In exchange.)

Journal des Connaissances Médicales Pratiques et de Pharmacologie. Sept., Oct., Nov., Dec., 1843. Jan. 1844. (In exchange.)

Journal de Médecine et de Chirurgie Pratiques. Oct., Nov., Dec., 1843. Jan. 1844. (In exchange.)

L'Expérience, Journal de Médecine et de Chirurgie. Sept., Oct., Nov., Dec., 1843. Jan. 1844. (In exchange.)

Annales de Thérapeutique Médicale et Chirurgicale et de Toxicologie. April, May, June, July, Aug., Sept., Oct., Nov., Dec., 1843. Jan. 1844. (In exchange.)

Journal de Pharmacie et de Chimie. Oct., Nov., Dec., 1843. (In exchange.)

Annales Médico-Psychologiques. Journal de l'Anatomie de la Physiologie et de la Pathologie du Système Nerveux, destiné particulièrement à recueillir tous les documents relatifs à la science des Rapports du Physique et du Moral à la pathologie mentale, à la médecine légale des aliénés, et à la clinique des maladies nerveuses; par M. M. les docteurs Baillarger, Médecin des aliénés à la Salpêtrière. Cerise et Longet. Jan. 1844. (In exchange.)

Bulletin Bibliographique des Sciences Médicales et des Sciences qui s'y rapportent. Nos. 2, 3. 1843. (In exchange.)

Zeitschrift für die gesammte Medicin. Aug., Sept., Oct., Nov., Dec., 1843. Jan., Feb., March, April, 1844. (In exchange.)

Heijze's Archief voor Geneeskunde. 1842, 1843. (From Dr. Oppenheim.)

The Boston Medical and Surgical Journal. April, May, and June, 1844. (In exchange.)

The American Journal of Science and Arts. April, 1844. (In exchange.)

The St. Louis Medical and Surgical Journal. March, April, and May, 1844. (In exchange.)

The Illinois Medical and Surgical Journal. Vol. I. April and May, 1844. (In exchange.)

The Western Lancet. March, April, and May, 1844. (In exchange.)

The Bulletin of Medical Science. April, May, and June, 1844. (In exchange.)

The Western Journal of Medicine and Surgery. April, May, 1844. (In exchange.)

The Select Medical Library, April, 1844, containing Nunneley on Erysipelas. (In exchange.)

The New Orleans Medical Journal, devoted to the cultivation of Medicine and the Associate Sciences. May, 1844. (In exchange.)

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The Anatomy and Physiology of the Nervous System of Man and of the Vertebrated Animals generally; comprising a Series of Pathological Observations in relation to the Nervous System, and a detail of Experiments made upon the higher order of Animals. By F. A. Longet, M. D., &c. &c. - - - - -	161
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A complete Treatise on the Anatomy, Physiology, and Pathology of the Cerebro-spinal Nervous System. By M. Foville, Physician in Chief to La Maison Royale de la Charenton, &c. &c. Part 1st. Anatomy—with a quarto atlas containing 23 lithographic plates. - - - - -	171
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Medico-Psychologic Annals. A Journal of Anatomy, Physiology, and the Pathology of the Nervous System. Particularly devoted to the collection of all documents connected with the science of Physical and Moral relations, to Mental Pathology, the Medical Jurisprudence of Insanity, and Clinics on Diseases of the Nerves. - - - - -	196
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THE
AMERICAN JOURNAL
OF THE
MEDICAL SCIENCES.

JULY, 1844.

ART. I.—*The Influence of Oxygen on the Human System.* By D. P. GARDNER, M. D., Lecturer on Chemistry, New York, &c. No. 1.

IN this paper I propose to consider the influence of oxygen gas on the changes natural to the human body, and in future communications, the results of those changes.

1. The discovery of Dr. Scherer, that the azotized proximate principles of plants and animals are identical, is the most important fact in physiology. The processes of digestion and nutrition hang upon it. But it has not only simplified our doctrines in regard to these two important functions, but also offers a solution of the still more recondite subject of the metamorphosis of tissues.

From the remotest antiquity, it has been asserted that the being of to-day is altogether distinct from the individual of twenty years back. Nutrition and repair have been abundantly investigated, but the waste of tissue, muscles, and glands has been neglected as beyond our reach. That constant death of parts which maintains the energy of the whole, has been too unpromising or humiliating a subject for physiologists. The dogma of Buffon, so grossly misrepresented and little understood, that the larger animals are accretions of the lower, is again appearing in a more philosophical dress to throw light upon the functions of the animal frame. Each molecule of the body, endowed with its proper life, passes through a cycle of existence without drawing with it the destruction of the machine of which it is an integrant—nay, further; that machine is endowed with new attributes by the arrangement of its minor parts. So a single cell in plants, (*Chlorococcum vulgare*), is capable of inhaling gas and fluid, of decomposing carbonic acid in the sun's light, and forming chlorophyl, and starch and albu-

men, but it has not all the properties of united cells; it cannot lay down an enduring trunk.

2. The analysis of vegetable fibrine from wheat, and fibrine of blood gave Scherer

(C) Carbon=	54.603 and 54.454
(H) Hydrogen=	7.302 and 7.069
(N) Nitrogen=	15.809 and 15.762
(O) Oxygen=	} 22.285 and 22.715.
(S) Sulphur=	
(P) Phosphorus=	}

Numbers which, those familiar with the results of organic analysis will perceive, indicate perfect similarity of composition. These numbers have been reproduced in the researches of Mulder, Boussingault, Varentrap, Will, and Jones. It is not true of fibrine only, but the albumen and casein of animals and vegetables are identical. But of the two kingdoms, vegetables only possess the property of forming out of inorganic matter, such important substances. This function of plants upon which animal existence depends, is in its turn dependent upon the action of the sun's beams. By their quickening influence the frail cellules of an humble weed can destroy the chemical affinities of the atoms of carbonic acid, which no galvanic battery can effect, and uniting the carbon with water, lay the foundation of these nutritious bodies. Some fungi are, indeed, eminently nutritious, although growing without light, and beneath the surface of the soil, as the truffle (*Tuber cibarium*), but these are secondary organizations, depending upon the presence of organic matter in the earth—the destroyers rather than the producers of vegetable principles.

3. The animal machine being incapable of forming fibrine, depends for its supply upon plants, and by their ingestion it enters the stomach. Its fate therein cannot be discovered from all the works on physiology previous to the time of Scherer. So sublime did the mystery of digestion appear, that those medical men who have not kept pace with the advance of chemical knowledge, can hardly be persuaded that it is no more than a case of solution. Fibrine digested, which they would have termed fibrine vitalized, animalized, chymified, made fit for the nutrition of human beings, is, indeed, in our day no more than *fibrine dissolved*.

By what route we care not, by lacteal or absorbent, it reaches the blood, and there Mulder and Scherer prove that it is no more than the identical fibrine which we trace in a vegetable juice, or the seeds of the cerealia.

4. Passing with the current of blood along the circulation, ever ready to put on the insoluble form as soon as the chemical requisites to its solubility are disturbed, each atom ultimately reaches its place of destination in the system. Imprisoned in a capillary, which allows no further progress to the denser parts of the blood, one principal condition of the soluble state, *motion*, is arrested, and fibrine reaches its appointed station to form one monas of a complex animal. Nutrition is no more, in this case, than precipi-

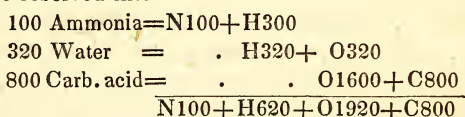
tation, for Playfair and Boeckmann show that the composition of blood and the bodies produced therefrom are similar.

But the position occupied by the newly added molecule is not fortuitous—certain forces having guided its career, and they continue to control its destiny. These are nervous power and vitality, or that collection of actions which physiologists are pleased to call vital, because unable to separate into their components.

5. The place of deposit, wherever it may be, forms part of a perishable tissue—the fibrine becomes subject to the law of the structure. As an independent body, it might have retained its form for ever if removed from the agency of moisture and oxygen—or it might have experienced decomposition in a few minutes. But its fate is now determined by the necessities of the system—this condition remaining, however, that in its complete decay the same agents are required and the same products generated.

6. Fibrine decaying in atmospheric air is surrounded with an abundance of oxygen gas and moisture; its resulting products are dependent upon these conditions. To place the study of this decomposition in a clear light, I shall adopt the atomic constitution of fibrine—Carbon 800, Hydrogen 620, Nitrogen 100, Oxygen 240, Phosphorus 1, Sulphur 2, with 0.77 per cent. of sulphates and phosphates of lime and magnesia. (Kane.) Under the freest supply of oxygen, and in circumstances producing slow decay, all the carbon would form carbonic acid, all the nitrogen would unite with hydrogen to form ammonia, and the hydrogen in excess, would form water.

Thus, the atom of fibrine, omitting the sulphur, phosphorus, and saline matters, would be resolved into



and for the change 1680 atoms of oxygen are required more than the fibrine contains. This perfect eremacausis would, however, occupy much time, and requires a slowness of decay, foreign to azotized matter. The truth is, that although the preceding products would be formed, if the conditions were maintained—yet in the destruction of such bodies the decomposing forces are of too active a nature to give time for the amount of oxygen necessary to become absorbed, and new but feebler affinities between carbon, nitrogen, and hydrogen come into operation.

If the fibrine decays under the influence of fermentation, which is an active process, the compounds of carbon, hydrogen, and nitrogen, are produced much more freely. Cyanogen, carburetted, sulphuretted, phosphuretted hydrogen make their appearance as well as ammonia, water and carbonic acid—not in virtue of a specific operation, but because the ratio between the rapidity of decay and absorption of oxygen is altered. Just as the difficulty of procuring oxygen increases, the production of hydrogen

compounds increases, and in those situations where it cannot be absorbed, hydrogen compounds only are formed.

It is this law of nature which has secured to our race the invaluable mineral *coal*. If the vegetable matter from which it has been produced, had been abundantly supplied with oxygen, during decay, every atom of carbon would have become carbonic acid. But as soon as the atmosphere was excluded, all change ceased with the last portions of hydro-carbon formed, leaving nearly pure carbon in anthracite.

7. In the human body, the atom of fibrine, now a molecule in a muscle or other organ, suffers death or decay under similar laws. If we turn our attention to the ejected products of animals we discover in *health* an entire absence of compounds of hydrogen with carbon, sulphur and phosphorus—these bodies I have said mark the want of oxygen, and are the result of rapid decay or fermentation. The living body does not, therefore, in rejecting its effete parts adopt under normal circumstances a fermentative process. Neither does it proceed by a perfect oxidation or *eremacausis*, for we are aware of the generation of compounds of nitrogen with carbon. What then is the character of the change?

8. We can obtain a knowledge of it only by considering the products resulting. In the discussion of extra-animal decay, the character of the decomposition is known by studying the nature of the bodies generated; this is also the method in investigating the ultimate metamorphosis of tissues.

All the normal constituents of the animal frame, may be classed under the distinct heads of fibrine, or protein compounds and fats. We may simplify our discussion without the remotest shadow of error, by leaving the latter bodies out of view, and regarding only the protein class. Again, we may confine ourselves to fibrine as a representative of the whole class, and by determining its changes, argue fully and correctly to that of every portion of the frame. Omitting partial transformations into chondrine, hair, gelatine, arterial membrane and secretions so ingeniously discussed by Liebig, I will proceed at once to the perfect metamorphosis of fibrine into effete matter.

9. The excreting organs, whereby the products of decay are thrown from the system, are the kidneys, lungs, skin and cutaneous glands. They are not to be confounded with the secreting glands, the liver, spleen, testes, parotids, thyroids, salivary, pancreas, mammæ, mucous exhalents, &c. In which list I have included several structures whose office is unknown, but it is certain from their situation that they are not excretors. The liver, pancreas, and salivary glands have thus been considered by some, but improperly, for the saliva is an important adjunct to digestion; the liver and pancreas, by throwing their secretions into the unabsorbed chyle, are evidently intended to alter the form of substances which have passed through their structure, and fit them for a return into the animal economy.

Nor is the discussion affected by our ignorance of the office of many glands. The constitution of expired air is no matter for cavil; the composi-

tion of urine, and the character of cutaneous excretions are known, and this knowledge is sufficient in itself to furnish us with the history of every particle of fibrine that suffers decay.

10. Searching in the urine for some of the products of decay, we learn that principally azotized and saline matters are drained off from the system by the kidneys;—those azotized bodies which have reached a state of metamorphosis that not only unfits them to remain in the tissues of the body, but renders them injurious to health. They must not be confounded with such fluids as have only reached a partial change, as bile, (C37, H66, N5, O22,) and contain nitrogen, and are subject to further decay, before thrown out of the system as effete.

11. The exact nature of the urinous azotized matters, will be seen in the accompanying analysis of urine by Berzelius (*Chemie*, t. vii. p. 392).

Water	-	-	-	-	-	-	933·00
Urea	-	-	-	-	-	-	30·10
Uric acid	-	-	-	-	-	-	1·00
Lactic acid and lactate of <i>ammonia</i>	-	-	-	-	-	-	17·14
Mucus	-	-	-	-	-	-	0·32
Sulphate of Potash	-	-	-	-	-	-	3·71
Sulphate of Soda	-	-	-	-	-	-	3·16
Phosphate of Soda	-	-	-	-	-	-	2·94
Biphosphate of <i>ammonia</i>	-	-	-	-	-	-	1·65
Chloride of Sodium	-	-	-	-	-	-	4·45
Muriate of <i>ammonia</i>	-	-	-	-	-	-	1·50
Phosphate of lime and magnesia	-	-	-	-	-	-	1·00
Silica	-	-	-	-	-	-	0·03

1000·00

Of the above substances those in italics contain nitrogen. It is worth while to consider the composition of these bodies with regard to the other elementary constituents.

Urea consists of	N2+C	2+O2+H4
Uric acid	N4+	C10+O6+H4
Ammonia	N1	. . H3

N7. C12. O8. H11

As there are 100 atoms of nitrogen in the formula of fibrine (6), we may elevate the nitrogen in the above sum to that number, preserving the form in regard to other elements—the process gives nearly N100, C171, O114, H157. This calculation is based on the supposition that the quantities of the azotized bodies in urine, are in proportion to their atomic weights—such, indeed, is not the case, but the proportion of nitrogen is higher, for of the substances enumerated, urea and ammonia constitute nearly the whole, and the former contains little carbon, whilst ammonia is without any.

If we contrast the ratio of the elements to each other, in the table, with

the composition of fibrine, we cannot fail to be struck with the large amount of nitrogen in comparison to the carbon; whereas in fibrine they are as 1 to 8; in urea they become as 1 to 1; in uric acid as 2 to 5, and in ammonia the carbon is absent. These proportions will not be lost, whatever be the relative amount of the different urinous compounds.

So far, then, urine is a much more azotized product than fibrine, and on the ground that it results from the decay of the latter, a large quantity of carbon is unaccounted for.

12. If the water of urine be taken into the account, as it should be, an additional amount of oxygen and hydrogen are separated from the elements of fibrine. What the exact amount of water produced by the combination of its elements derived from decaying fibrine may be, is uncertain, for water drank by the individual escapes by the kidneys also. This much is, however, certain, that just in proportion as the oxygen and hydrogen are separated from the components of fibrine, the excess of unappropriated carbon increases.

13. Nor can we escape the conviction that the kidneys are not destined to separate this element by discovering the presence of lactic acid ($C_6 + H_4 + O_4$) and lactate of ammonia in urine. Lactic acid by the formula contains $1\frac{1}{2}$ times as much carbon as oxygen, but in fibrine the ratio is as 10 to 3; if, therefore, a sufficient quantity of lactic acid were present, to consume all the oxygen of fibrine, 440 atoms of carbon would be still ununited. This acid is by far the most highly carbonized constituent of urine. But as there should be no doubt left on the mind, as to the office of the urinous excrement, it is proper to observe that lactic acid is not a product of the decay of fibrine. Purely carnivorous animals eject uric acid principally, serpents only urate of ammonia. The presence of lactates arises from the decay of bodies of the starch family remotely, or of the oleaginous family approximately.

14. There remain the saline matters of urine; phosphate of lime and magnesia are proper to fibrine. Phosphate of ammonia is generated by the oxidation of the atom of phosphorus of fibrine, and the subsequent union of phosphoric acid with ammonia of the decaying matter. Part of the sulphuric acid is also the result of the oxidation of the two atoms of sulphur. The remaining saline matters are derived from other proximate substances, and from salts taken with food.

The presence of mucus in minute quantity is to effect a further decay of urea and uric acid. These substances, when chemically pure, are stable, but in the presence of putrefactive agents and oxygen, are resolved into ammonia and carbonic acid.

15. Upon a thorough investigation of the history of each constituent of urine, we are still left with a large quantity of carbon after the separation of every other element. It is unnecessary to trace the separation of the hydrogen; for in all the foregoing products of decay, urea, uric acid, ammonia, and water, it is present in high proportion.

16. Perspiration is another form of excretion by which a part of the products of decay leaves the body. It usually puts on the form of vapour in passing from the skin, but when exhaled in large quantities, or in an atmosphere, with a dew point approaching 90° F., it becomes fluid. In both conditions, as insensible perspiration or sweat, it has been chemically examined;—the former by Thenard and Anselmino, the latter by Berzelius and Anselmino.

17. Perspiration consists of water holding in suspension saline matters, a little animal matter, and carbonic acid. Some of these substances are volatile, others fixed. As long as insensible vapour only passes, the volatile portions escape from the skin, but leave behind a pellicle of saline matter, which forms the scurf of persons negligent of cleanliness. An accumulation takes place, especially in the armpit and groin, from the activity of the cutaneous glands in those regions of the body. In sweat the fixed salts flow off in solution.

18. From the examination of Anselmino, reviewed by Berzelius, we learn that 100 parts of sweat contain 0.5 to 1.25 per cent. of substances not volatilized by a water-bath. This great difference depends upon the quantities of water drunk. Of the solid matter 22.9 per cent. was indestructible at a red heat—making 0.114 to 0.286 per cent. of saline matter in sweat. The salts are carbonate, sulphate and phosphate of soda, with traces of similar potash salts, chloride of sodium, carbonate and phosphate of lime, and a trace of oxide of iron. The carbonates of this list are the remains of incinerated lactates.

Among the volatile substances are lactate of ammonia, and an oil possessing the peculiar odour of the animal.

Carbonic acid, in a free state, was found in minute quantity by Anselmino; Collard de Martigny subsequently discovered nitrogen and hydrogen, but in uncertain quantities. The nitrogen has been traced by Liebig to atmospheric air taken into the stomach with saliva. It is apparent that where large quantities of water are drunk, the nitrogen and carbonic acid must escape through the skin and lungs. Those who visit sulphur springs are aware of the exhalation of sulphuretted hydrogen by the epidermis. These minute quantities of gas are not, however, the product of decaying fibrine; for, with the exception of water, carbonic acid, and ammonia, the results of its metamorphosis in the system are dissimilar from the products of putrefaction. Both urine and perspiration are thrown out of the body with a portion of animal matter (mucus), that the final steps of decomposition may be accomplished out of the frame. Food, especially that which has commenced to ferment or is very prone to change, may liberate gas in the intestinal canal, but this has no connection with the metamorphosis of tissues.

The principal constituent of perspiration is water; no doubt a portion of it is drawn from the oxidation of the hydrogen of fibrine, but the greater part must be derived from fluid taken into the stomach.

Little of the surplus carbon is separated; for, although carbonic acid is a constituent of its excretion, and oxygen may be absorbed by the skin, both these actions take place to so limited an extent that it has hitherto been considered too unimportant to be measured.

19. It may be proper, before entering on the study of the excretion of the lungs, to make some remarks on the mucous membrane of the intestinal and urinary apparatus. These have been regarded as the internal skin by many physiologists. If such be the case, should we not look upon it as an excreting surface, and enumerate its products with those of the kidneys and lungs? But that this is not incumbent upon us will appear from an examination of the matters thrown out by these mucous membranes—not where they are full of glands—but in the most simple state, as in the male pelvis. If any notable excretion were thrown off the mucous membrane of the urinary system, it would be found in urine. Yet, upon examining that fluid, we find only 0.032 per cent. of mucus which has not been derived from the kidneys. The office of the mucus has been explained; it is not an excretion, but secretion.

It may be imagined that, notwithstanding the absence of excretion in the urinary mucous membrane, the quantities of mucus, or fluids evaporating from other portions of the tissue, may be considered excrementitious. This speculation can be readily disproved. If the lining membrane of the intestinal canal throws off any quantity of fluid, it cannot be in the form of vapour, but as liquid, inasmuch as the perfect saturation of the gases contained in the canal renders the process of vaporization impossible. The hypothetical fluid produced in the upper parts of the tube, as the œsophagus, running downwards into the stomach, would be absorbed by the spongy tissue of that organ in the same way as water. But the absorption of excretions is unnatural, and contrary to the laws of the organization. With respect to the fluid excreted according to this hypothesis in the small intestines and colon, omitting the certainty of absorption, unless produced in immense quantities, it is evident that in a state of health the stools containing so much fluid should be watery! How certainly absorption of liquids takes place may be gathered from the well known facts, that persons suffering from constipation, eject indurated fæces; and injections of soups, &c. into the rectum, have served to maintain life in cases of lock-jaw, &c. for weeks.

But if the excretion of a quantity of fluid were a function of the mucous membrane, what fate would await the lungs of persons resident in moist tropical countries? Vapour of water exists in expired air, but it is not necessarily an excretion of the mucous membrane. The amount of vapour derived from the lungs, is directly as the drying power of the inspired air, which proves it to be no more than an exhalation of moisture produced on mechanical principles. Thus if the dew point of inspired air be 98° F., the passage of vapour from the surface of the mucous membranes becomes nothing. Or, in other words, if we allow that the secretion of fluid is a

function of the mucous membrane, we must likewise admit that in health the action may be suspended for months without any apparent disturbance. This amounts to an absurdity. Another consequence, no less unnatural, attends the assertion that mucous textures excrete a fluid; if the function existed, a dew point of 98° F. would not arrest it; how is it with the epidermis, under that atmospheric condition, perspiration ceases, but copious and compensating sweat is produced? So in the lungs, *sweat* or fluid should be formed sufficient to counteract the pressure of the dew point. Does any one believe that it is so produced?

The halitus of mucous membranes, and the moisture of expired air, are, therefore, not excretions, but owe their origin to mechanical causes.

20. If we turn our attention to the solid dejections, we find no evidence of intestinal excretion. The solid itself consists of those portions of food which are insoluble in chyle, in excess, or innutritious, and therefore not appropriated by the system—we find no mucous excretion. It is not in the excrement of an over-fed luxurious gourmand we are to expect this result, for in such cases an irritation of the lining membrane of the larger intestines may cause them to throw out an abundance of mucus. But turning to the lower animals, let us examine the character of the *fæces* of a healthy dog fed on meat and bone—it is well known to consist of a white friable substance called album græcum by the older pharmacopolists, and yielding on analysis scarcely any thing but the inorganic matter of bones, (phosphate of lime,) which is insoluble in chyle. In the case of carnivorous birds, also, we find nothing but the urate of ammonia, with inorganic matters as excrement, a trace of mucus sufficient to produce decay, being added as in the case of urine.

21. These facts are of deep interest to physiology, not only as proving that there is no such thing as mucous excretion, but also in their bearing on the important question of the office of bile, which is still considered an excretion by medical men. On this subject I may now pronounce a decided opinion, that bile is not an excretion, or in any way concerned with the ultimate decay of fibrine. The proof is found in its entire absence in the preceding cases; but in addition to these, it was my misfortune, some years since, to lose a friend by death, whose ductus communis choledochus had been obliterated by the passage of biliary calculi eight months before his decease. During the whole of this time no bilious secretion was thrown into the bowels, and yet he enjoyed a tolerable amount of health. The further history of the case I will communicate in this journal on another occasion.

It is not my object to assert that bile may not be found in any specimen of excrement. Berzelius gives 0.9 per cent. of it in a specimen of human *fæces* examined by him. But its presence indicates that the quantity formed by the liver is too great for re-absorption, or that some other disturbing cause

is in action; and considering the great irregularities of men in taking food, this is probably a frequent case.

22. There remains but the pulmonary excretion to carry off the surplus carbon left from the decay of fibrine, (15). To this office it is destined. The carbon has, however, to be converted into carbonic acid to render its escape practicable. Hence the absorption of oxygen from the external world becomes necessary. In addition to carbonic acid, expired air contains a varying quantity of vapour of water, and sometimes a minute increase of nitrogen. Of the former I have spoken already; the latter derives its origin from air taken into the stomach with saliva or water, and is not a product of decay.

The lungs are at once destined to excrete carbon and absorb oxygen gas—but the union of these elements to form carbonic acid does not take place to any great extent in the pulmonary apparatus, but in numerous points in every part of the body where fibrine and other animal bodies are undergoing metamorphosis; the acid thus formed is conveyed to the venous system, and subsequently thrown out by the lungs.

23. The entrance of oxygen, under these circumstances, into the circulation, has been a subject of much debate amongst physiologists. We have not time now to discuss the many ingenious hypotheses, advanced in favour of and against this view. They are all subject to grave objections, and I should have dismissed the matter, had not Professor Mulder's paper on the oxidation of protein reached me in time. From his analytical researches, it appears that protein, which is fibrine without its saline matter, is oxidized in the lungs by the reception of three equivalents of oxygen, and becomes $C_{40}H_{32}N_5O_{15}$. In this way the oxygen is carried to every part, and wherever there exists a chemical affinity requiring that element, the fibrine abandons it probably at the loss of its soluble state. In other words the conversion of oxygen by fibrine is attended with two results, the simultaneous supply of the gas to atoms undergoing *eremacausis*, and the deposition of fibrine in the proper point as a substitute for the loss. *Hematosin* is also recognized by Mulder as a means of distributing oxygen. The view of Liebig that the means was the peroxidation of the iron of blood is unworthy of that splendid chemist.

24. We are now prepared to answer the query proposed—What is the character of the decay fibrine undergoes within the animal body, in its ultimate change? The features of putrefactive fermentation and complete *eremacausis* (6) have been given; to neither of these processes does the change belong. Neither gaseous carburets, sulphurets, or phosphurets are produced as in fermentation, nor is all the carbon converted into carbonic acid, and the hydrogen not consumed in forming ammonia united with oxygen to generate water. The former of these compounds marks a minimum of oxygen, the latter a great abundance. Time is an essential element in these changes, for

if the action be reduced to a minimum, abundance of oxygen being present, a portion of the nitrogen will also be oxidized or converted into nitric acid.

The decay of fibrine in the frame is also dependent upon the oxygen, but takes its character neither from excess nor deficiency of supply. The reason is to be found in the capacity of the lungs. To convert all the carbon into carbonic acid and 320 atoms of hydrogen into water, would require the absorption of 1680 atoms of oxygen more than the fibrine contains; but by separating a portion of these elements in the form of urea and uric acid, the amount of oxygen necessary for metamorphosis, is considerably diminished. The lungs cannot, under ordinary circumstances, supply sufficient oxygen for complete eremacausis.

25. That the capacity of the pulmonary apparatus and frequency of respiration are the true causes of the peculiar decay or sub-eremacausis of the living frame, is proved by the changes which occur in the products of the urine. The amounts of urea and uric acid are perpetually fluctuating. In persons who are active, urea is considerably in excess, or the sole result, while in sedentary persons, and those who suffer from confinement, uric acid increases in proportion. Urea contains more oxygen than uric acid, for urea equals $C_2H_4N_2O_2$, or carbon 2, oxygen 2, and uric acid, ($C_{40}N_4H_4O_6$) only 6 of oxygen to 10 of carbon.

26. It is unnecessary to state that the decay of parts is essential to the welfare of the whole—that upon the cessation of atomic metamorphosis, the destruction of the system ensues. The nature of the decay we have reduced to one primary condition, the amount of oxygen entering the body, but there are disturbing causes which control the quantity, and direct the metamorphosis of parts. These are, frequency of respiration and the nervous power. The balance of these three component forces cannot be disturbed without the production of change, which may eventuate in disease. Let the respirations become greatly increased, larger amounts of oxygen enter, the fibrine in the blood is converted in excess into the tritoxide of Mulder, which is identical with the *buffy coat of the practitioner*, the transfer of the oxygen therefrom to various parts of the body, exalts the temperature by hastening the changes of metamorphosis, more urea is produced (Prout)—in other words, a fever is the result.

27. The amount of oxygen entering controls the result. If, then, the nature of the decay be dependent upon an external agent, what is the influence of vitality in the process of metamorphosis? In other words, is this a case of vital change, produced under peculiar laws, independent and superior to chemical laws, that is by the vital force? I answer it is not, that the process is purely chemical, and subject to no disturbance whatever; the places where change takes place in the economy, are regulated by other causes, not by the admission of oxygen only, but the products of decay are formed solely under the agency of chemical forces. There is no difference between the decay of fibrine necessary to health, and external decay, con-

ducted in such a manner as to yield urea, uric acid, ammonia, carbonic acid and water. The real difference between the metamorphosis of animal matter and similar external decomposition rests in this important particular, that in health the removal of one atom of fibrine is attended with the deposition of another, capable of performing the same function—this timely and essential addition is the work of what may be called the vital force, for upon it vitality depends.

28. Therefore the fibrine of the bodies of animals is subject to a peculiar decay, depending upon the access of oxygen, and being a sub-eremacausis whereby urea, uric acid, ammonia, water, and carbonic acid are produced. This may be termed *vital eremacausis*, because activity depends upon it, and as a means of separating the change from putrefaction, and complete eremacausis.

Vital eremacausis owes its character to the circumstances—that it occurs at a fixed temperature, 98° F., that the supply of oxygen to the amount of fibrine changed is rigorously limited, and the time in which it takes place is also determinate. Alter any of these conditions, and the nature of the decay changes; there is nothing specific in it; the amount of change may bring about disease, but if radically altered, death is the result.

Nor am I chargeable with examining the effect instead of the cause. Fibrine, as such, whether in the texture of an animal, or in the laboratory, like every other definite chemical compound, is so constructed that its atoms are in equilibrio,—it has no innate power of change, but when removed from external agencies may remain *fibrine* to eternity. It is altered only by external causes, and the product depends upon the cause. In the human body, the causes of change are oxygen and moisture; these, therefore, must be present primarily, or, in other words, inspiration of oxygen is the first act of existence.

The metamorphosis of matter is, therefore, the cause of activity, for no particle of fibrine undergoes decay without the production of those molecular forces which are the producers of heat, light, electricity, and other effects. If the metamorphosis is hastened, as by the use of protoxide of nitrogen, or by rapid inspiration, the activity is heightened—in these cases, an increased quantity of oxygen enters in a given time, but must be appropriated; it cannot be rejected as an element from the system, and it therefore acts upon more atoms of fibrine.

It will be perceived, however, that the oxygen diffused throughout the economy by the blood, has not the power of spontaneously deserting the fibrine (with which it is combined, according to Mulder), but does so only under the influence of molecular forces. Were it otherwise, the oxygen would act exclusively upon the first atoms of fibrine it encountered—but we know that changes may become much more active in one part of the body than another, without respect to its distance from the lungs. There is, therefore, a power which protects one atom of fibrine, whilst it exposes

another to decay. Without the existence and recognition of this force, the action of oxygen would be destructive instead of sanative, and no chemical theory is tenable without it. What the force is, or whence it originates, is not for discussion now; there is no question that it manifests itself through the nervous system. It has nothing to do with the products of *eremacausis*, for whenever an atom is abandoned to the action of oxygen, chemical forces only come into operation.

It may be agreeable to call the directing force vitality or vital force, for it undoubtedly regulates waste and supply, directs motion and growth, but it does not act in violence to chemical or mechanical forces.

ART. II.—*On Cyanosis, or Morbus Cæruleus.* By MORETON STILLÉ, M. D.*

CYANOSIS, or *Morbus Cæruleus*, by either of which terms the disease we propose to treat of is sufficiently well designated, had not attracted, until of late years, much notice from medical writers. It is indeed true, that cases of the disease are to be found scattered through the periodical works of the last century, and that, as faithful portraits of its more striking features, they are unexceptionable; but we have to regret their imperfect description, in many instances, of structural alterations, and often the entire want of any account of these conditions. Had the value of these signs been always duly appreciated, the knowledge of the true pathology of the disease would not, perhaps, have been so long obscured, and the ingenuity expended in the support of fanciful hypotheses would have been more usefully employed in legitimate inferences from well ascertained facts. Several treatises on cyanosis, and chiefly from the pens of the French and German writers, are now extant, and have been regarded as containing all that was known of its pathology. The doctrines advocated in them have received a general and tacit assent, but we think that they will be found to be the offspring of a too narrow observation, and to embody speculative notions rather than sound principles.

The first approach to a more correct mode of investigation was made by M. Gintrac, of Bordeaux, who, in 1814, wrote an inaugural thesis upon this subject. Ten years after its publication it was again issued, in a more complete form, M. G. having, in the mean time, much extended his researches, and somewhat modified his opinions. His essay contains the history of 53 cases of cyanosis, collected by him from various works, some of which were rare, and difficult of access. M. Louis, in 1823, published a

* This paper was presented as an Inaugural Thesis to the Medical Faculty of the University of Pennsylvania, in January, 1844, and is now published in compliance with their unanimous request.

short treatise upon "The Free Communication between the Right and Left Cavities of the Heart," and founded his views of the pathology of the disease upon a consideration of eighteen cases.

From these cases, and from others which we have ourselves collated, it is now proposed, as preliminary to the examination of some controverted points, to give a brief general description of cyanosis, and its more important structural alterations, and while confining ourselves within the limits of well-attested facts, to avoid, for the moment, any assertion as to the relative frequency or value of either symptoms or lesions.

The sense in which we shall use the word cyanosis, is that of a blue discoloration of the skin and mucous membranes referable to some organic lesion of the heart or its great vessels. To define the disease more strictly would be a transgression of the present limits of our pathological knowledge, and however desirable the establishment of a positive and well supported cause of the disease may be, we shall be able, in the course of this article, to show into what serious errors and inconsistencies an over-hasty and too restricted a definition has led.

Cyanosis is met with chiefly in the earlier periods of life, occurring congenitally, or showing itself a few years after birth. When not congenital, its approach may be gradual, and the first indications of a disturbed circulation so slight as scarcely to attract notice; or, on the other hand, its invasion may be sudden, and complete discoloration be at once established. If, as is sometimes the case, cyanosis has first made its appearance in mature years, the attack is often referred by the patient to some antecedent injury; as a severe blow or fall. The extent and intensity of the discoloration vary in different cases, and at different periods in the life of the same individual. When it is but partial, it is most marked in the lining membrane of the mouth, upon the lips, cheeks, extremities of the fingers, and in those parts generally where the skin is delicate, and the capillary vessels numerous. The colour varies in its shades, from a mere livid tint to the most complete blackness, and is more marked in all violent efforts, and under the influence of strong moral impressions. If paroxysms occur, the discoloration will be deepest during their continuance, while in the remissions it may be but slight, or even entirely absent. The discoloured parts are also, at the same time, more or less cedematous. The external temperature of the body may be perfectly natural, or, on the other hand, so much lowered as to render the situation of the patient very distressing. In these latter cases the body seems incapable of receiving warmth, and the patient is chilled even in the hottest days of summer. The functions of digestion and secretion do not seem to be altered in any marked degree, but those of circulation and respiration exhibit the greatest deviations from the healthy standard. While the patient is in a state of repose, his breathing may be calm and regular. In some cases, however, the dyspnœa is habitual, but in all it is either induced or aggravated by any cause tending to excite the circulation. For this reason

persons affected with cyanosis, are either averse from, or incapable of exertion, and in them a vivid moral emotion will often bring on great oppression. Some are thrown by these causes into the most alarming paroxysms; the countenance becomes suddenly anxious and distressed, the surface livid, the respiration hurried and gasping, and the movements of the heart tumultuous and irregular. A state of syncope follows, in which the patient may lie for several hours. In some cases the paroxysms occur without any obvious exciting cause, and it is in one of them that the fatal issue takes place. The following lesions, defects, and alterations of structure of the heart and its great vessels, have been found in persons who have, during life, been affected with cyanosis.

- 1st. Dilatation and hypertrophy of the right cavities of the heart.
- 2d. Contracted state of the left cavities.
- 3d. A heart consisting of but one cavity.
- 4th. A heart with two cavities, an auricle and a ventricle.
- 5th. A heart with two auricles and one ventricle.
- 6th. Persistence of the foramen ovale, or a cribriform condition of the auricular septum.
- 7th. Deficiency of the ventricular septum at its base, or an entire absence of it.
- 8th. Dilatation of the aorta.
- 9th. A rudimentary condition of the pulmonary artery, contraction of it, adhesion of its valves, deficiency of one or more of them, cartilaginous or other growths at its orifice, or complete closure of it by membranous septa.
- 10th. Persistence of the ductus arteriosus.
- 11th. Contraction of the right auriculo-ventricular opening.
- 12th. Transposition of the aorta and pulmonary artery.
- 13th. The aorta and pulmonary artery arising from one ventricle.
- 14th. The aorta and pulmonary artery arising from a common trunk.
- 15th. The aorta giving off branches to the head and upper extremities, and the pulmonary artery forming the aorta descendens.
- 16th. The aorta giving off two pulmonary branches.

Some of these anatomical dispositions are often coincident, and in another place we shall endeavour to indicate their more frequent and important combinations; at present, however, it will be sufficient to note the great variety of pathological conditions that have been found in cases of the disease under consideration. The concurrent lesions of other organs, although well deserving of attention after the establishment of a well-founded theory of cyanosis, can be of little use in the investigation we are entering upon; for they are, for the most part, either secondary effects of the disturbance of the respiratory or circulatory functions, or mere accidental complications. The elements essential to the production of the disease manifestly reside in the heart and great vessels; to these, therefore, must our attention be mainly directed if we wish to discover its laws of causation.

The phenomena of cyanosis have been, by different writers, referred to one or other of the following causes.

1st. Obstruction to the return of the venous blood to the lungs.

2d. Presence of the venous blood in the general arterial system.

The first of these modes of explanation has been adopted by Louis, Berard, Bertin, and Ferrus among others, and has been regarded as an occasional cause by some of the advocates of the other view of the pathology of the disease. The class which takes this middle course is, perhaps, more numerous than either of those which maintain an exclusive doctrine, and whatever may be said of the consistency of thus admitting in turn one or other of two conflicting theories as may suit convenience, it certainly is a safe refuge from absolute error; for whichever may eventually be found to be incorrect, this class can never be *wholly* in the wrong. Among those who maintain the doctrine of the mixture of arterial and venous blood as the cause of cyanosis, may be mentioned, Morgagni, Senac, Corvisart, Caillot, Labat, Bouillaud, and particularly Gintrac, to whose industrious researches we have been much indebted in the present investigation. It may be mentioned here, that while the presence of venous blood in the general arterial system was considered by these writers the essential cause of cyanosis, they did not limit the mode of its production to any one anatomical condition of the heart; many, however, espousing their views, have thoughtlessly narrowed down the means of communication allowing the admixture of the blood to that one which is the most frequently met with, *viz.*, an opening in the auricular septum, so that at present, and particularly in our own country, cyanosis and an open foramen ovale, are very generally regarded as inseparable. This untenable modification of the more general statement would hardly demand notice, were it not for its great prevalence, and the confidence with which remedial measures are sometimes based upon it.

Notwithstanding, however, all that has been written upon the subject, the pathology of cyanosis cannot yet be considered as resting upon stable grounds. The affection is one of rare occurrence, presenting a great variety in the character of its phenomena and *post-mortem* appearances. Manifestly, therefore, the history of one or two isolated cases can never entitle the observer to establish a general law of the disease. Nor, again, can the collation of a large number of recorded cases be of any value if deductions be made, not from the cases themselves, but from the opinions of those who have observed them. These last may be, and very often are, founded upon imperfect examinations; prejudice, ignorance, and many other causes, may render the conclusions obtained valueless, and one who, from such materials, should expect accurate results, could hardly fail of disappointment.

It is also evident, that although in the majority of instances some one symptom or lesion may have been found constant in its occurrence, yet its mere frequency is apart entirely from the importance it may claim in the history of the disease. For example—the striking discoloration of the skin

from which cyanosis takes its name, is entirely absent in some cases in which the structural alterations, regarded by some as the essential cause for its production, exist; and yet if the comparative frequency of their occurrence were alone to be received as a sufficient test of the value of their relation to this symptom as cause and effect, we should be led into the error of admitting *that* to be essential to the production of the discoloration, which facts had proved was not so. It would not be difficult, indeed, to trace to its true cause the proneness to fall into this logical error; it requires but feeble persuasion to convince us of what we are already disposed to believe, and no one can be safe from the mistake of admitting a plausible explanation as a *true* one, if he be in search of arguments to sustain some preconceived and favourite theory. To consider dispassionately, and with equal care, all the facts presented to our observation is an indispensable requisite in any investigation, and the most certain way of practically insuring it, is the adoption of some method of examination, by which the erroneous influence of even an unconscious leaning to any particular doctrine may be precluded. The plan pursued in the present essay will be found to present this advantage among others. All the attainable cases on record in the periodical works, and in the treatises on cyanosis have been collated, condensed, and subsequently arranged in a tabular form, the prominent points of interest in each being, at the same time, placed under their appropriate heads. In this manner upwards of 80 cases have been examined, the results of which we shall be enabled to present in the following pages.

The two theories of the pathology of cyanosis having been stated above, let us now examine to what extent they are consonant with the facts thus obtained—and

1st. Of the presence of venous blood in the general arterial system.

The conditions necessary for this result, are, abnormal communications between the right and left cavities of the heart, or such a disposition of the principal vascular trunks as will allow their contents to intermingle. Whenever the black is brought into contact with the red blood, the colour resulting from the contamination is intermediate, or of a purple hue. If then, as the advocates of this doctrine maintain, there can be no discoloration of the skin, without this admixture of arterial and venous blood, we should always find, in cases where discoloration existed, some one of the communications abovenamed, for it is evident, that this explanation being an exclusive one, must, if true at all, be true of all cases.

In five cases, however, (the authorities for which are cited below,*) neither the foramen ovale nor the ventricular septum was open, nor did there exist any other passage by which the arterial and venous blood could commingle. Yet in *all* of these, there was the discoloration of the skin which

* Archives Gén. de Médecine, vol. viii. p. 594. Bouillaud, Malad. du Cœur, Obs. 77, p. 155. Edinburgh Med. and Surg. Journal, vol. liii. p. 552. Ibid. 1830. Lond. Med. and Phys. Journ., vol. xiv. p. 471.

is characteristic of cyanosis; in two it was partial in extent, in three complete. The other phenomena of the disease were likewise present. In a future part of this paper, these cases will be again taken up; the facts pertinent in this place, are those already stated, and they prove, 1st, *That cyanosis may exist without admixture of the blood.*

Again, the communications permitting this admixture, being of very frequent occurrence in cyanosis, it is rarely that cases are to be found, illustrating like the preceding, the want of relation between the disease, and its alleged pathological cause; as these communications vary, however, in their seat, and in the degree in which they will allow the access of the venous to the arterial blood, there should be a difference in the depth and extent of the cyanosis corresponding to the degree in which the blood is mingled. But numerous cases of the continued patescence of the foramen ovale are on record, in which, nevertheless, no symptoms of cyanosis had been manifested. Cases, also, of partial deficiency of the ventricular septum, without any accompanying discoloration of the skin, are of not infrequent occurrence. Setting aside these points altogether, as being open to some doubt in regard to the amount of blood vitiated, it will conduce more to a correct understanding of the actual relations of the discoloration with the mixture of the blood, if we examine those cases only in which the latter was not merely possible, but inevitable. In such, of course, the discoloration should bear a certain proportion in extent and intensity, to the degree in which the arterial was adulterated with the venous blood.

The four following cases are examples of this kind; we have annexed to each the amount of the discoloration as stated by those who observed them.

1. Ventricular septum open, aorta arising from the right ventricle,—no cyanosis except an occasional lividity of the lips.*

2. No pulmonary artery. Aorta arose from both ventricles, and gave off large bronchial branches. *Face only* cyanosed. Age 16 years.†

3. Heart with two cavities; the aorta and pulmonary artery arose from a common trunk. The lips livid upon the day of his birth, and that of his death. Age 7 days.‡

4. Heart with two cavities. Aorta gave off two pulmonary branches. Cyanosis slight and remitting. Age 3 days.§

In all of these cases, there was of necessity a thorough admixture of the blood, and a contamination thereby of the whole circulating fluid, altering its colour at the same time that it vitiated its character. So complete, indeed, was this vitiation, that it is difficult to understand how it was compatible with life. If a mere perforation of the auricular or ventricular septum were adequate, as is affirmed by some to the production of a general and marked discoloration of the skin, and the other phenomena of cyanosis, certainly we should have been warranted in anticipating at least an *equal* result in

* Lond. Med. and Phys. Journ., N. Ser. vol. vi. p. 548.

† Ibid.

‡ Gintrac, *Récherches sur la Cyanose*, p. 44.

§ Farre, *Pathol. Essay on Malform. of Heart*, p. 2.

these instances. For if the effect bear any proportion to its alleged cause, the individuals in whom the lesions just named were found, should have offered the symptoms of cyanosis in the extreme. But, so far from this, it will be seen that in those cases affording the means for the most complete mixture of the blood there was the least discoloration. These four cases prove,

2d. *That there is no proportion between cyanosis, and the degree in which the blood is mixed.*

So great, indeed, is this disproportion, that these cases would render it highly probable that it may sometimes amount to an entire want of connection, but this is conclusively demonstrated by the two following cases.

1st. Foramen ovale open; pulmonary artery arose from both ventricles, gave off pulmonary branches, and formed the aorta descendens. The aorta gave off the arteries of the head and upper extremities, and joined the pulmonary artery by the ductus arteriosus; no cyanosis. Age 8 months.*

2d. Heart with two cavities; aorta and pulmonary arising from the ventricle; no cyanosis. Age 11 days.†

We are now entitled to proceed one step further, and to state the converse of the first proposition—viz:

3d. *That complete admixture of the blood may take place without cyanosis.*

M. Gintrac, who is, as we have before said, the most strenuous supporter of the doctrine of the mixture of the blood as the cause of cyanosis, encountered the difficulty presented by the cases just cited. Having met with several instances of the origin of the aorta over the ventricular septum, or in other words, from both ventricles, and in which cyanosis did not occur till several years after birth, he asks—"How shall we account for this late appearance of cyanosis?" "Must not the venous blood in these cases mingle with the arterial? Does there exist, in the early periods of life, any obstacle to this mixture? I think not. I am inclined to believe that, in new-born children, the two kinds of blood differ less, than at a more advanced age. The first inspirations produce in the organism a general stimulation; immediately the skin appears of a brilliant colour, the heart and vessels are strongly excited, the circulation of the blood is rapid, and from this activity, this velocity in the course of the fluid, result on the one hand, less considerable losses of the vivifying principles in the general capillary system, and on the other, a more prompt reparation in the capillary system of the lungs."

These sentiments have been quoted in M. G.'s own words, as it was feared that, if abbreviated, they might not be conveyed with sufficient precision. We would be reluctant to receive an hypothesis so gratuitous as this, as a satisfactory explanation of a well-established fact. That an increased velocity in the current of the blood is a reason why it should part with less of its vivifying principles, is a novel proposition in physiology, and one which,

* Farrer, Pathol. Ess. p. 15.

† Am. Journ. of Med. Sciences, Oct. 1843, p. 447.

we believe, will not stand the test of the most cursory examination. Is the nutrition of the young and growing being less active than the same process in the adult, and does not this function depend upon the surrender of what are vaguely termed "the vivifying principles?" What, in fact, is the object of the "prompt reparation" of the blood in the lungs if not to restore to it anew those "vivifying principles" which, in its route through the body, it has just yielded up? Adopting this hypothesis as a sufficient explanation of the absence of cyanosis in new-born children, where there was an unequivocal mixture of the two kinds of blood, it then became necessary for M. Gintrac to show how it was that cyanosis was *ever* congenital. He says that the action of the air on the lungs was, "in these cases, incomplete, imperfect, almost null. In most of them, in fact, the pulmonary artery was contracted, or even obliterated at its origin."

One of the effects of the contraction or closure of the pulmonary artery, supposing no compensation for the same to exist, and to which M. G. refers, would be, that a less amount of blood would reach the lungs. And the idea, which doubtless is here implied, is, that, therefore, the whole of the circulating fluid must be of a venous character, and give, in consequence, its colour to the skin. But, although the blood arrive at the lungs in a diminished quantity, there is no reason why the hæmotosis of this should not be complete; and the only influence that such a condition could exert upon the the character of the circulation, would be that it would diminish the mass of the arterial blood. M. Gintrac's views of congenital cyanosis involve then, not only an abandonment of his theory of the mixture of the blood, (which is, indeed, acknowledged by him to be insufficient,) but also of that of deficient hæmotosis, which is substituted in its place.

Having now seen the discrepancy existing between the occurrence of cyanosis, and the pathological conditions to which it has been referred, we shall here only subjoin one fact, which the cases we have collected have enabled us to determine, and which is, at the same time, confirmatory of the three positions already attained. If there be preternatural communications in the heart, or its great vessels, and the mixture of the blood has ever taken place, it must continue to do so. Moreover, the *degree* in which the arterial blood is deteriorated, will remain relatively the same; for although the heart may, under the influence of many causes, propel its contents with greater vigour, yet as this increased energy is shared alike by both sides, the discoloration can be no greater, as the amount of blood mingled is relatively the same as in a state of repose. Hence, it follows that there ought never to be any variation in the same individual of either the extent or intensity of the discoloration. It should be permanent. Such is, indeed, in many instances the case, a circumstance which, in another place, will be ascribed to what we consider its true cause. But in all cases in which the blood is mingled, the discoloration should be unvarying in its shade and extent, if upon that condition alone it depends. We have noted 77 cases in which

there were means for the mixture of the blood to take place. Of this number there were 29 in which the colour was constant in its extent or shade, or in which these particulars were not a subject of observation. In the remaining 48 there was a variation either in the depth, extent, and progress of the discoloration. In some the lips alone, in others these, the cheeks, the chin, and the extremities of the fingers and toes were cyanosed, and again in others the whole body was implicated; a light brown, a violet or livid hue, or the utmost blackness, were to be seen at different periods in the same individual, and these shades, passing into each other insensibly, while they, in some, did not permit the skin to return to its natural colour, in others allowed the remission to be complete and the skin natural, until the super-vention of certain exciting causes reproduced the morbid appearance. The designation of the mode in which these causes act is reserved for another place; but from the evidence of these facts we are warranted in concluding, that as the mixture of arterial and venous blood is a cause acting with uniformity at all periods, it follows,

4th, *That the variation in the extent, depth, and duration of the discoloration is inexplicable by the doctrine of the mixture of the blood.*

It is presumed, that sufficient data have now been obtained to place the fact beyond cavil, that cyanosis cannot be referred to a mixture of arterial and venous blood as its cause. In estimating the value of these objections to the popular theory, let it be remembered that they claim no farther validity than that which belongs to the facts upon which they are based; the justice of the inferences we have made it is in the power of any one to verify. The rejection of this theory, however, does not impose upon us the necessity of adopting in its place any other with merely *plausible* pretensions; for as this has been abandoned only after full proof of its incorrectness, so can any other be entitled to reception only by resting its claim upon satisfactory grounds. Nor, indeed, could our inability to offer any adequate explanation of cyanosis, invalidate in the least the objections we have urged against the doctrine of the mixture of the blood, for the arguments by which this, or any other theory which shall account for its phenomena on distinct principles, is upheld, are independent; an insufficient refutation, therefore, on the one hand, or inadequate confirmation on the other, cannot necessarily imply the correctness of the opposing doctrine. Nevertheless, all will admit, that where two theories, both of which cannot be true at the same time, are proposed to account for certain morbid phenomena, if one of them can be proved, from careful examination, to be unsupported by the evidence of well-observed facts, there results in favour of the other a higher presumption, which may be the more easily elevated into demonstration, inasmuch as it is then sustained, not only by positive, but by negative proof. It has been mentioned before that there is but one other method of explaining the phenomena of cyanosis, viz:—that which ascribes it to a congestion of the general venous system, resulting from some obstruction in the right side of the heart,

or in the pulmonary artery, impeding the return of its blood to the lungs. It is now proposed to examine the basis upon which this doctrine rests, in order to determine whether or not it be entitled to our belief. We shall pursue the same mode of investigation in the examination of this theory as in that of the other; therefore, if *true*, the structural lesion which it assumes must fulfil the three following indications.

1st. That it shall account satisfactorily for the discoloration of the skin and the dyspnoea.

2d. That it shall be found in every case of cyanosis, or if not, there shall exist in its place some cause acting upon similar principles.

3d. That it shall never be found without the concurrence of cyanosis, or if it is, that a satisfactory explanation of the exception shall be given.

1st. *Does the contraction, obstruction, or imperforation of the pulmonary artery account satisfactorily for the discoloration of the skin and the dyspnoea?* The fact is a familiar one, that any cause impeding the return of the venous blood to the heart will produce a congestion in the veins exterior to the locality of the obstacle, which, according to the time the impediment remains, will manifest itself by giving a bluish or blackish tinge to the part. The appearance of the arm when, in the operation of bleeding, the ligature has been too tightly applied, is an example of partial cyanosis. If, however, the impediment be seated nearer the central organ of the circulation, in the air passages, as in croup, or in the lungs, as in pulmonary congestion, the cyanosis is then general, affecting first, however, the veins of the head and face, because of their proximity to the cause of the obstruction. Is it not, then, a reasonable inference, that, if the pulmonary artery, which is the grand outlet for the venous blood returning from every part of the body, be either obstructed at its orifice or narrowed in its calibre, the whole venous system must be consequently congested? Moreover, where these obstructions of the pulmonary artery exist, the capillary vessels must be constantly more or less distended, and it is highly probable that this state of dilatation must destroy, in some degree, their tonicity, and favour still more the stasis of venous blood in them. For this reason we should expect to find the discoloration chiefly manifest in the most vascular parts, and in those also which, being remote from the centre of the circulation, have the current in them proportionably sluggish. This, indeed, is consistent with general observation, and we find, accordingly, that the mucous membranes, the lips, the cheeks, and the ends of the fingers and toes, are the first to manifest the congestion. The pressure of venous blood upon the right side of the heart, resulting from an obstruction in the pulmonary artery, distends the cavities of that side, and from this distension, and the resistance to the due performance of their functions in consequence of the obstacle to the exit of the blood, they become often permanently dilated and hypertrophied. Of 53 cases of cyanosis in which the pulmonary artery was either contracted, obstructed or impervious, the condition of the *right cavities* was the subject of observation

in 36. The right auricle was dilated in 15 cases, and dilated and hypertrophied in 7. The right ventricle was dilated in 10, hypertrophied in 13, and dilated and hypertrophied in 12. The state of the *left cavities* of the heart was observed in 33 cases of the same series. The left auricle was contracted in 9, dilated with thinning in 1, and natural in 3. The left ventricle was contracted in 12, dilated in 3, thinned in 3, and natural in 3. We would state here, that we are not willing to rely upon these results, and especially on those which regard the condition of the left cavities of the heart, as exact, it being highly probable that in hasty or imperfect examinations, slight differences may have been exaggerated, or really valuable indications overlooked; yet the peculiar character of the deviation from the healthy standard, as exhibited in a diminution of the size of the left side, and a dilatation and hypertrophy of the right, is too remarkable to be passed by, and the dependence of the latter upon the obstruction to the passage of the blood through the pulmonary artery too probable to be admitted with much reserve. When considering the question whether or not the mixture of the blood was the essential cause of cyanosis, it was shown, from certain cases then quoted, that there was such a disproportion between the phenomena of the discoloration, and the cause assigned for their production, that it was impossible to view them in the relation of cause and effect, and it was also shown, that the great variation in the extent and in the shade of the discoloration, was inexplicable by a cause acting with uniformity at all periods. Upon examining those cases in which the pulmonary artery was either contracted, obstructed, or impervious, with a view to ascertain how far the character of the discoloration was influenced by these conditions, we find, that of 53 cases of cyanosis, in which the former was observed, the latter was mentioned in 36. In *all* of these 36 cases there was a variation in its extent and intensity. Such a result is easily explained by the anatomical conditions. For it is well known that the colour is deepened and increased in extent under the influence of emotional causes, or of slight bodily excitement; and as the ordinary result of these is an increased activity of the circulation, and of the flow of blood through the pulmonary artery, an obstruction of this vessel would, of necessity, cause a turgescence of the whole venous system, corresponding in degree to the grade of the excitement, and producing a like variation in the discoloration of the skin.

Dyspnœa is a striking feature of cyanosis, and frequently recurs in paroxysms under the influence of mental or bodily excitement. If the blood be sent to the lungs in a quantity less than is required for the discharge of the function of hæmatisation, an attempt is made to compensate for this deficiency by an increased frequency of action; but if the movements of the heart be suddenly augmented in energy, there is, of necessity, a greater amount of blood thrown upon its right cavities, and the lungs expand, at the same time, more rapidly to receive it. The pulmonary artery, however, being obstructed, and the right cavities distended with the accumulated blood, its escape, except

in small quantities, is prevented, and the action of the lungs, thus rendered ineffectual, becomes like that of the heart, laboured and irregular, until at last syncope supervenes, and gives a short repose to those organs whose continued action was only adding, each moment, to the obstacle they were endeavouring to surmount. The state of the respiration was the subject of observation in 39 of the cases we have collected. In 3 of these the condition of the pulmonary artery was not observed, but in the remaining 36, in all of which the artery was either narrowed or obstructed, the dyspnœa was habitual, and speedily increased by movement or by moral impressions.

2d. Is the contraction or partial or complete obstruction of the pulmonary artery to be found in every case of cyanosis, and if not, is there in those cases where it is wanting, an efficient cause of a similar character?

There is one difficulty which presents itself on the very threshold of this inquiry. It may be thus simply stated. The common lesion of the pulmonary artery in cyanosis seems to have been unknown to a great number of observers, while that of the foramen ovale was known to all. The latter was then sought for in all cases of cyanosis, while the former may, in many, have been neglected. The popular opinion in regard to the efficiency of the open foramen in producing the disease was, no doubt, an additional reason why the state of the pulmonary artery was not observed in every case. We would not, perhaps, be warranted in taking it for granted, that, in all those cases in which all the pulmonary artery was not observed, the lesions above-mentioned might, upon examination, have been found, although we would have good reason to infer this to have been the fact from the large number of cases, *similar in all respects*, in which the pulmonary artery was either contracted or obstructed. To avoid, however, introducing into estimates, which we wish to render as accurate as possible, an element, whose value we cannot ascertain, *those cases only* in which the pulmonary artery was *observed*, will form the basis upon which we shall proceed.

The pulmonary artery was observed in 62 cases. *In 53 of these, it was either contracted, obstructed, or impervious.* The remaining 9 cases presenting the phenomena of cyanosis without any one of these anatomical conditions existing, fall under the category of those cases, which, in accordance with a previous statement, must be examined in order to determine whether they act upon the same principle. Of these cases it is stated that the pulmonary artery was in—1 natural; 1 dilated; 1 aneurismal; 1 communicated with the aorta; 1 arose from the left ventricle; 2 given off by the aorta; 1 given off in two pulmonary branches by the aorta; 1 absent, but bronchial arteries large.

1st. In the first of these cases, the patient was a young man, who died at the age of 18 of an “insidious fever.” During the last ten years of his life, he had been the subject of observation. His history, previous to that period, is entirely omitted, and thus one important fact, viz., the date of the attack, is left entirely to conjecture. The violet colour of the skin and lips

diminished or augmented every moment, according to his impressions, his attitude and movements, and the difficulty of his digestion or respiration. Upon *post-mortem* examination, evidences of sanguine congestion were found everywhere. The heart was large, and all its cavities filled with a semi-fluid black blood; the walls of the left ventricle were less than three lines in thickness, while those of the right ventricle were six lines thick, and the *columnæ carneæ* so much developed, as almost completely to obstruct the cavity of the ventricle. The auricular septum offered an opening of three lines in diameter. The effect of this almost complete obliteration of the cavity of the pulmonary ventricle can hardly be misunderstood. The amount of blood received by it could have been but very small, and there being provided no adequate compensation for the resistance thus opposed to the discharge of venous blood into its cavity, the whole of that resistance must have been felt throughout the entire venous system. The right ventricle being thus obstructed, any cause exciting the circulation, and throwing an increased quantity of blood upon it, must have cast it into violent, irregular and fruitless action, and consequently brought on the whole train of distressing symptoms which the patient experienced. The structural lesion of the right ventricle was, in fact, operative almost precisely in the same manner as would have been an obstruction to the passage of blood through the pulmonary artery. It is a matter of regret that the early history of this case has not been recorded, as, from the progression of the symptoms, some light might, perhaps, have been thrown upon the rare occurrence of hypertrophy of the right ventricle unconnected with other lesions of the heart.*

2d. A postilion, aged 57 years, received some violent blows upon the epigastrium, and during the three following weeks had dyspnœa, fainting fits and great pain in the part where the injury had been inflicted. These symptoms had subsided in a great degree when he received a new contusion in the same place. From that time he had palpitations, irregular pulse, suffocation on the least movement, œdema, ascites, &c. His face was livid or *violacé*. How long he survived this last injury is not mentioned. The heart was "voluminous," the right ventricle very much dilated and hypertrophied, and its *columnæ carneæ* as great as those usually found in the left ventricle. The right auriculo-ventricular opening was dilated, and the tricuspid valve proportionately enlarged. The cavity of the right ventricle was "enormous," its walls very thick, and the fleshy columns much developed. "The left auricle was dilated and thinned, the left auriculo-ventricular opening very much contracted, and the mitral valve thickened and rugose." The cavity of the left ventricle was so small as scarcely to receive a walnut, its walls being at the same time slightly thicker than natural. In the fossa ovalis there was an opening of an inch in diameter, its border thin, loose, and tendinous. The aorta was, at its origin, very much contracted,

* Gintrac, Rech. sur la Cyanose, p 98.

and the pulmonary artery dilated as far as its bifurcation, and its valves proportionately enlarged. It may be said that this cannot be quoted as a case of cyanosis, inasmuch as, previous to the reception of the injury above mentioned, the patient was in good health. But it is certainly sufficiently characteristic in the discoloration of the skin, and in the attendant symptoms, and so like in these to all the cases of acknowledged cyanosis in which the progress of the disease was gradual, that it may be ranked among them without the risk of violating any principle of arrangement. The symptoms recorded of this case are precisely those of all congestions of the venous system, where the cause of the obstruction is near the centre of the circulation. In this instance, the primary cause of the congestion may, we think, be found in the left side of the heart; the aorta being, as already stated, very much contracted, the left ventricle greatly lessened in capacity, and presenting, in the thickened and contracted state of the auriculo-ventricular opening, an important obstacle to the discharge of the aerated blood. The right side of the heart, as will be seen from the remarkable development of its muscular apparatus, was acting with unnatural energy, and thus the whole pulmonary circulation must have been consequently congested. This engorgement reacting, at the same time, upon the general venous system, this system was, in its turn, subjected to the influence of the remote cause in the left side of the heart, retarding the blood in its course, and preventing its free ingress into the lungs.*

3d. The case coming next in order is that in which the pulmonary artery was "aneurismal." The mode in which this condition would act in inducing venous congestion, is too evident to require illustration. The subject of it, aged 41 years, "was remarkable for the lividity of his complexion, the fulness of the vessels of the conjunctiva, and the thickness of his lips, which were, at the same time, nearly black. The respiration was so much disturbed that he could not pronounce two consecutive words, and he died in a state of suffocation."†

4th. In this case the pulmonary artery was prolonged directly into the aorta, and its branches were given off from its posterior aspect. The heart full of black blood, and the foramen ovale open. The child who was the subject of this report lived but twelve hours. Its colour, which soon after birth was seen to be black, became gradually less dark, until it assumed a bluish tinge; the difficulty of its respiration increasing, however, each moment, the skin became again perfectly black, and soon afterwards the child expired. The preservation, in this instance, of one of the characteristics of the foetal circulation in the continuance of the ductus arteriosus, or (as stated in the report) the prolongation of the pulmonary artery into the aorta, and the failure to establish those new routes which the first act of inspiration should create, furnish us with a striking illustration of the

* Bouillaud, *Malad. du Cœur*, p. 562.

† Gintrac, p. 64.

separate dependencies of uterine and extra-uterine existence. The placenta, it has often been remarked, holds the same relation to the fœtus as the lungs to the breathing child. But the function performed in the one case by the placenta, in the other by the lungs, is, in each, essential to the maintenance of vitality. If, then, after the circulation through the placenta has been cut off, the blood does not find access to its new respiratory organ, or if it be sent there only in part, life is entirely extinguished, or but imperfectly sustained. The blood, dammed up from its natural reservoirs, surcharges the general venous system, and the phenomena of asphyxia, persistent in this case on account of the remediless nature of the malformation, become fully established. The gradual decline in the depth of the discoloration, and its sudden recurrence in all its intensity, denote the struggle that nature was ineffectually making to fulfil her ordinary law.*

5th. In this case it is said that the pulmonary artery arose from the left ventricle. There existed, in fact, but one ventricle, the right being "rudimentary." The two auricles also constituted but one, as they formed "one large cavity without the least separation." The left auriculo-ventricular opening "was very much contracted, and its valve formed a cylindrical canal capable of receiving the index finger." The corresponding opening of the right side was "a little orifice of three lines in diameter, with a valve made of a fold of the lining membrane of the heart." The pulmonary artery was destitute of valves. A concurrence of such remarkable defects and alterations of structure of these could, of course, not have existed without a very serious interference with the general health. And the manner in which such disturbance was effected, cannot, we think, be a matter of doubt. By the morbid alteration of the valvular apparatus of the ostia venosa, both the systemic and pulmonary blood, in their returning currents, encountered an obstacle to their entrance into the ventricle. The result of this must have been a congestion of both systems, the signs of which, during life, were—a violet colour of the skin deepened by efforts in crying, difficult respiration, tumultuous and irregular movements of the heart, and anasarca of the abdominal parietes and the lower extremities. This child lived for three months and 23 days.†

6th and 7th. These two cases are introduced here on account of their being instances of the anomalous origin of the pulmonary artery, it being given off in both by the aorta. But they are examples also of slight contraction of that vessel, it being in one $\frac{5}{16}$ of an inch less in circumference than the aorta, and in the other its branches, as well as the pulmonary veins, were only one-half their usual size. The pathological influence of this contraction of the pulmonary artery could not have been other than that which would have been induced, had it arisen as usual from the right ventricle. The heart, in both these instances, consisted of only two cavities, an

* Gintrac, p. 150.

† Ibid., p. 173.

auricle and a ventricle. Cited before in this essay, the *first* of these cases was adduced to show the great disproportion that existed between the degree in which the blood was mingled, and that of the discoloration, which amounted merely to a lividity of the lips, apparent on the day of the birth of the child, and the seventh day afterward, when it died.* In the other case the discoloration seems to have been more diffused, the difference being referable to the greater diminution in the calibre of the pulmonary vessels.†

8th. This case has also been cited before for the same purpose as the first of the two preceding, (page 30). The pulmonary branches received their blood only after it had first passed through the aorta. This vessel held, therefore, the same relation to them as a pulmonary artery, and would have fulfilled the same office for them, in a degree compatible, perhaps, with a more extended term of existence than that which the patient attained, had it not been so contracted at its origin as materially to interfere with its own proper functions, as well as to keep back a proper supply of blood from the lungs. The discoloration was, as stated before, slight and remitting.

9th. The last of the cases which we proposed to examine, is that in which it is stated that the pulmonary artery was absent, but its place supplied by bronchial arteries. The meagreness of the details furnished in the report of this case, and the ambiguity of some of them, may possibly lead us into erroneous deductions. We cannot, however, believe that the arteries here referred to under the name of bronchial, were those usually given off by the descending aorta; for this supposition is not required by a rational construction of the language used, nor is at all compatible with the fact of the individual who is the subject of the report having reached the age of 16 years, as there stated. We presume that the word bronchial was employed to denote the size and not the place of origin of the arteries spoken of, and that they might, with greater propriety, be termed *pulmonary*, and be considered as having been given off at the arch of the aorta. If this view be correct the case is similar to the one immediately preceding, in which the aorta is said to have given off two pulmonary branches, and the partial discoloration of the skin is equally explicable by the anatomical condition.‡ As the aorta arose from both ventricles, and therefore transmitted blood of a mixed character, this case has been before cited with reference to that fact, (page 30.)

In order to avoid fatiguing repetition, it has been our endeavour, in the notice of these cases, to be as brief as was consistent with a correct appreciation of their individual peculiarities. It is hardly necessary to revert in the present place to the necessity that called for their examination. It will be remembered that, having in a previous part of this article examined, by means of the cases we had collected, the doctrine which ascribed cyanosis to

* Gintrac, p. 44.

† Ibid., p. 56.

‡ Lond. Med. and Phys. Journ., vol. vi. p. 548.

a mixture of the venous with the arterial blood, it was considered that there was adequate proof of its invalidity; in looking, therefore, for some lesion which should be an invariable coincident of cyanosis, and at the same time, an efficient cause of its production, it was found that the contraction of the pulmonary artery was so constant in its occurrence that the few cases in which it was not found might, perhaps, upon examination, be discovered to act upon similar principles in the causation of the ordinary phenomena of the disease. The nine cases which we have just examined, were the only ones in which the pulmonary artery was not contracted, obstructed, or impervious. But in nearly all of them much more important alterations of structure than a mere contraction of the pulmonary artery were found to exist, and it was then necessary to examine whether the conditions presented by them were such as were capable of producing venous congestion, or, in other words, of operating on the same principle as did the contraction of the pulmonary artery.

It will now be seen, that so far from affording any ground for an objection to the doctrine that the essential characteristics of cyanosis are constituted by general venous congestion, they do on the contrary confirm it, and prove that there is no *one* lesion which is entitled to be considered as the anatomical character of cyanosis, but that it depends simply upon any cause which, acting at the centre of the circulation, will produce a stasis of venous blood in the capillary system. Cases of cyanosis, therefore, may be met with in which no one of the anatomical dispositions above enumerated shall be found; or, again, the lesion upon which the disease may really depend, shall be so recondite as to elude observation; but as it is evident that the variety of malformations and alterations of structure may be almost without limit, and that many more than those we have been able to gather may be productive of congestion, such instances will, probably, only bring additional proof of the correctness of the conclusions that previous facts have afforded. We are now prepared to state that the second requirement that was proposed as necessary for the establishment of any theory of cyanosis, is fulfilled by the facts that have been adduced, viz.

2d. *That the alleged cause shall be found in every case of cyanosis, or if not, there shall exist in its place some cause acting upon similar principles.*

It will be seen that the next requirement, viz :

3d. *That the alleged cause shall never be found without the concurrence of cyanosis,* is met by the same facts which were brought forward under the preceding head. We have found, in fact, no one case of contraction, obstruction or imperforation of the pulmonary artery in which there was not cyanosis.

If *contraction of the pulmonary artery* be now taken as the type of all the lesions that may produce a cyanosis, we are entitled to state,

1st. *That it is present in every case of cyanosis.*

2d. *That it never exists without the concurrence of cyanosis; and*

3d. *That it is an adequate explanation of the most important phenomena of the disease.*

The question has been agitated, and mostly in a speculative manner, whether or not the contraction and obstruction of the pulmonary artery were congenital lesions. As it has been previously stated that in all the cases of cyanosis which we had collected, this lesion was uniformly found (9 cases excepted, in which for the most part, there was a malformation of the heart), it is hardly necessary to add, that in all those which were congenital, either contraction or partial or complete obstruction must have existed from birth. In order, however, that direct evidence on this point may not be wanting, the following statement is subjoined.

In 28 cases of congenital cyanosis the pulmonary artery was contracted, obstructed, or impervious.

It was found to be impervious at its orifice, or contracted and obstructed, in those who died at the following ages :

Impervious in 1 at 7 days.	Contracted or obstructed in 1 at 6 years.
1 at 13 days.	3 at 8 "
1 at 23 days	1 at 9 "
1 at 5 weeks.	2 at 10 "
1 at 6 weeks.	2 at 11 "
1 at 8 months.	1 at 14 "
1 at 11 months.	2 at 16 "
1 at 15 months.	1 at 17 "
1 at 1 year.	1 at 18 "
Contracted or obstructed in 1 at 5 months.	1 at 29 "
1 at 5 years.	1 at 57 "

A few facts in regard to the relative proportion of the two sexes which were the subjects of cyanosis, the number of cases in which it was congenital, and the duration of life, may here be added.

Of 72 cases of cyanosis in which the sex was mentioned, 41 were male, 31 female; of 71 cases in which the date of the attack was observed, it was congenital in 40, and occurred in the remaining 31 non-congenital cases at various periods after birth.

The following table will show the duration of the disease in all the congenital cases.

7 patients died within 23 days after birth.
3 " " between 23 days and 10 weeks.
7 " " " 10 weeks and 1 year.
10 " " " 1 year and 10 years.
10 " " " 10 years and 20 years.
1 patient " at 29 years.
1 " " " 35 "
1 " " " 57 "

It having been the sole object of the present inquiry, to ascertain *the laws of the causation of cyanosis*, and at the same time, to do this in a manner

which, while it precluded speculative discussion, should place the results obtained upon a basis furnished by statistical evidence, it does not come within its proper scope to notice those other phenomena of the disease, which, although usually embraced in its description, are yet not to be deemed its essential constituents. Direct and decisive proof has been throughout insisted upon, and such the points alluded to are not capable of receiving. The writer will be amply repaid for the labour expended in the collection and preparation of the cases requisite for the foregoing investigation, if the results derived from them shall in any degree contribute to the furtherance of exact and useful medical knowledge.

ART. III.—*Case of Extirpation of a Bilocular Ovarian Cyst by the large Peritoneal Section.* By WASHINGTON L. ATLEE, M.D., of Lancaster, Penn., Professor of Medical Chemistry in the Medical Department of Pennsylvania College, Philadelphia. Read before "the Lancaster City and County Medical Society," April 17th, 1844.

DECEMBER 13th, 1843, I was requested by Dr. Adam Shellar, of Mountjoy, to visit Mrs. S., of Chicques, for the purpose of performing paracentesis abdominis in "dropsy of the abdomen." A mere glance at the abdomen induced me to doubt the existence of peritoneal dropsy, and upon a close examination I was fully satisfied that there was encysted or ovarian dropsy. As Dr. Nathaniel Watson, one of the attending physicians, was not present, and as the case would probably prove to be of more importance than had been anticipated, I proposed to postpone the operation until the 15th, in order that both the medical gentlemen might be present at the time of deciding upon the character of the disease by tapping.

Accordingly, upon the 15th, I again visited the patient, and received the following history from her:

She was 61 years old on the 26th of last November, never had had any children, did not believe she had ever conceived, had menstruated regularly in early life, and passed through her menstrual period at the age of 40 years, without any untoward symptoms. For four or five years she felt a fulness in the lower part of the abdomen, which has gradually increased until the present time. Her attention had first been called to the enlargement of the abdomen by a soreness there, which made it painful when she came suddenly against any object. How long she may have been swelled before this she does not know, but believes not long. About this period, and since, she frequently complained of pain in her *right* side, and would suddenly press with her open hand just above the hip bone. Before noticing the swelling she became very much constipated, and has continued so ever since, having recourse to small doses of Epsom salts as a daily laxa-

tive. The process of defecation is difficult, and accompanied with the sensation of a mechanical obstruction. The fæces, however, are round, but contracted in size. From the earliest period of constipation there has always been, also, a more or less frequent desire to pass urine. About the same time her *left* leg began to swell, the swelling having continued ever since, and the *right* thigh above, and in front, has been affected with neuralgic pains. For years she has been troubled with occasional slight attacks of hepatic derangement, which were readily relieved by mild mercurials. For many years also she had a constant herpetic eruption on her left leg, which became better about the time the dropsy commenced, although a scaly condition of the skin has continued. She was peculiarly susceptible to the operation of medicine, and she possessed a constitutional idiosyncrasy to the action of mercury, becoming salivated by a single application of a mercurial solution to the skin. She can lie better upon her right side than upon the left. One day, in the early part of November last, in a certain position of her body, she felt something roll or fluctuate in the abdomen, communicating the sensation of a fluid. Frequently during exercise her respiration became slightly accelerated, only however for a short time. This disturbance of the respiration she attributed to flatulency, to which she had been accustomed for years. Occasionally she felt a slight pain in the region of the uterus. Her appetite in general was good, but she required the observance of great care in diet, using the mildest nourishment for several years.

The following notes, which were taken at the bedside of the patient, were dictated to Dr. Shellar as the examination was being made by myself.

Pulse 88,* soft, open and full; skin soft and pleasant to the touch; temperature natural and uniform; tongue slightly furred, whitish, soft, moist, and spreading, the follicles at its root enlarged; ptialism, caused by a few doses of mercurials during the last week.

The patient lying on her back. The tumour of the abdomen is very prominent and nearly globular. Its greatest diameter extends from the left hypochondrium to the right iliac region. Below it is most prominent upon the right side, above it is most prominent upon the left, elevating considerably the cartilages of the ribs on that side. The lower edge of the thorax forms the upper boundary of the tumour, and is elevated by the latter. The tumour is softest upon the right side, most resisting upon the left. The sound, on percussion, is flat over the whole anterior face of the abdomen, even in the epigastrium and hypogastrium. By the hand a pulsation can be felt throughout the whole body of the tumour; by the stethoscope the impulse and sound of the aorta can be recognized over the whole tumour, but most strongly over the left side. The integuments of the abdomen are smooth and natural in appearance. The size is rather larger than at the full period of pregnancy; there is greater width, more prominence above the umbilicus, and rather more flatness in the most anterior part of the tumour.

The patient lying upon her left side. The change of position does not alter the appearance and contour of the tumour. The sound is flat in the whole lumbar region of the right side; tympanitic in the right hypochondriac region. Fluctuation in the right side is tolerably distinct.

The patient lying on her right side. There is no change in the tumour. The elevation of the left side when lying on the right, is greater than that of the right side when lying on the left. Tympanitic sound in the left lumbar

* On the 13th the pulse had been 80; it probably was now excited by the idea of paracentesis.

region merely distinguishable, but distinct in the left hypochondriac region. Fluctuation perceptible on the left side, but not so distinctly as on the right.

Examination per vaginam. The vagina is considerably shortened; a tumour can be felt through its posterior wall, having an extremely tender spot high upon its anterior face when pressed upon with the point of the finger backwards. The supposed cervix uteri is thrown forward behind the symphysis pubis, puffy, tumefied, but free from tenderness; the os tincæ is not evident.

Examination per anum. As soon as the finger enters the sphincter it strikes against a tumour, which is felt through the anterior walls of the rectum, and appears to be globular and very slightly uneven. It is movable and has a sarcomatous feel.

Previously to paracentesis the abdomen was again examined in reference to a proper point to introduce the trocar, the patient being on her back. By pressure over the abdomen a resisting body could be discovered parallel to the linea alba, about an inch or an inch and a half to the left of it, and along its greatest length. In order to detect this it was necessary to make very deep pressure, and it felt like a solid tumour dipping down under the linea alba towards the right side. Over the right side there was distinct fluctuation; over the left and also across the abdomen the fluctuation was indistinct. In consequence of these circumstances a point, about two inches to the right of the mesian line, and midway between the umbilicus and pubis, was selected for tapping. The trocar entered without using much force, and seven pints of lemon-coloured, very *clear transparent* fluid, of the consistence of serum, were drawn out. The abdominal tumour, however, only diminished on the right side, leaving the intumescence of the left side equally as great as it had been before tapping. Now, upon examining the abdomen again, the tumour, still existing within the left side, can be traced across the linea alba projecting deeply into the right side to the extent of three or four inches across the mesian line, having upon its deep surface loose longitudinal ridges, supposed to be folds of the flaccid sac just emptied. Fluctuation of the left side is now much more distinct than it was before, extending even into the deep portion of the tumour upon the right side. The aortic impulse is not so evident as before. This tumour evidently is a sac, and the appearance of solidity along the left of the linea alba, previous to paracentesis, was owing to the right sac having overlaid the left sac to a point beyond the linea alba, perhaps about two inches or more, thus making a superficial layer of fluid over the body of the left sac, through which the latter, upon deep pressure, simulated a deeply seated solid tumour. A ridge is also perceptible upon the left side of the linea alba, formed, no doubt, by the empty sac being folded upon the septum of the two sacs.

In consequence of this ridge a point, about two inches to the left of the linea alba, was selected for paracentesis of the left sac. It required more force to introduce the trocar than in the first instance. After making one plunge with the trocar, I had to follow it with another before it entered, and after it had entered the fluid did not flow freely through the canula; it appeared as if a portion of membrane was lying against the inner opening acting as a valve. From this circumstance I believe I must have first penetrated the overlapping layer of the right sac before entering the left, and that the left was only partially entered by the canula. However, upon introducing through the canula a flexible female catheter, which went in without opposition, a lemon-coloured slightly *cloudy* fluid, of the consistence of

serum, escaped through the catheter and around it through the canula. It amounted to ten pints. The whole extent of the abdomen was now diminished in size, and upon handling it an undulating vibrating motion was produced, as if some fluid still existed in the cavities, although all the usual efforts had been used to remove the whole of it.

The fluid from both cavities had an adhesive feel between the fingers, and when boiled was hardened like the white of an egg, so that the spoon containing it could be knocked, while inverted, against the table without displacing it. The fluid of the right sac, when shaken in a vial, formed a very adhesive bead, which continued a great length of time, while the fluid in the left sac formed a volatile bead, which disappeared directly. It did not affect litmus paper.

The urine, passed before tapping, was not coagulated by heat; it reddened litmus paper strongly.

Half an hour after tapping the pulse was 80, and in other respects the patient was the same as before.

After dinner, at 1 o'clock, when the patient had recovered from the fatigue of the operation, the examination was resumed, she lying upon her back. Longitudinal ridges can be felt upon the right side of the spine in the lumbar region. They are very movable, and supposed to be the folds of the flaccid cysts along the posterior part of the septum. The sound, on percussion, is distinctly tympanitic in the epigastric, right hypochondriac, umbilical and right lumbar regions, less so in the left hypochondrium, rather flat in the left lumbar, and flat over the whole lower part of the abdomen. Percussion over the ridges on the right side is painful when the pleximeter is accompanied with deep pressure.

The patient lying on her left side, and examination per vaginam. The part, previously supposed to be the enlarged cervix uteri, is now considered to be the uterus itself in a state of atrophy. It now occupies a position nearer to the sacrum than to the symphysis pubis, and more to the left side. A hard, globular tumour is felt through the posterior wall of the vagina; passing the finger under it I can elevate it above the brim of the pelvis, so as to feel it with my other hand placed over the *right* groin. While poising the tumour upon my finger in the vagina, and pressing with the fingers of my other hand into the pelvis from above the pubis, I can get beneath the tumour so as to elevate it considerably. The attachment to the *right* side of the uterus can be easily distinguished by pressing it between the finger within and the hand outside. This attachment is apparently very short, owing probably to the tumour being jammed against the uterus. No other attachments can be recognized. On the left side of the uterus nothing unusual is discovered in the pelvis.

Examination per anum. The finger again meets the tumour immediately within the sphincter lying against the anterior wall of the rectum. With the finger in this position, and the other hand on the right groin, the tumour can be played up and down, and seems less sensitive to pressure than before paracentesis. When the tumour is *in situ* the rectum is pressed flat against the curve of the sacrum. Hardened *flat* faeces are discovered in the rectum.

The tumour is considered to be an enlargement of the *right* ovary, associated with ovarian cysts. The *left* ovary is supposed to be free from disease.

Having now fully satisfied myself of the character of the disease, it became my duty to inform the patient of its probable results. I told her that the records of medical experience, as well as my own observation, fail

to render any assurance of the least prospect of cure by ordinary means—that ovarian dropsy is beyond the reach of medicine—that the disease, most likely, would never be less burthensome than it is now—that sooner or later it would cause death—that persons with the same disease had sometimes lived many years, but that at her age, and with her constitution and amount of suffering, this most probably would not be the case with her—that tapping would afford temporary relief, and that the oftener it was done the oftener and sooner it would have to be repeated, and thus by rapidly draining the system the sooner it would destroy life—that operations for the entire extirpation of the diseased mass had been performed, some terminating successfully, others fatally—that it was an operation of the greatest magnitude, and was not considered a legitimate or justifiable one by many eminent medical men—and that death might occur as its immediate or remote effects. On the other hand, I informed her, that an operation, although fraught with danger, afforded the only means of restoration to health—that, although her advanced age lessened, in some degree, the chances of recovery, yet I believed she had stamina of constitution sufficient to bear an operation—that I desired her and her friends to clearly understand me as not urging it upon her, or advising her to it—that after having duly and deliberately viewed the matter in all its aspects, she must decide for herself—that if she then determined to risk the operation rather than suffer her disease, I would undertake it, provided the services of a good nurse could be procured, and an experienced surgeon would share the responsibility of the case with me.

This statement having been made to my patient in the presence of her husband, her sister, and the attending physician, with a spirit of candour and frankness, I took my leave of her, promising to render my assistance in any way, and at any time it might be desired.

A letter from Dr. Shellar, dated December 22d, states that “Mrs. S. is doing quite well, her pulse ranging from 75 to 80, there being no febrile excitement. She sits up in bed, has not walked about, says she feels weak when on her feet. I measured her day after day, and so far find very little difference.”

March 7th, 1844, I was requested to visit Mrs. S. in order to tap her again. She informed me that for six weeks after her first tapping she felt pretty comfortable, but the fluid began to accumulate soon after I left her. She now feels much worse and much more oppressed than she did before the first tapping. She has to make water frequently, and passes only a little at a time; has, however, no occasion to rise out of bed at night to urinate, and can pass water with greater ease standing than she can in a stooping posture. She still has to resort to laxatives to procure stool, and defecation is difficult, and accompanied by a sensation of obstruction. Any kind of exertion, as getting into bed, overcomes her, and produces difficulty of respiration. Her *left* leg is considerably cedematous, the other less so. She complains of a peculiar forcing and pressing uneasiness and pain in the left hypochondrium.

After giving this account of herself she told me that she had concluded to have the operation performed, if I believed her capable of living through it, as she suffered so much from the disease that she felt satisfied, if not relieved, she must soon sink under it. Her friends were surprised at this announcement, as she had never spoken of the operation to any one until that moment, and from her silence all had concluded that she had no idea of it, although she had arrived at that determination some time before. I therefore

conducted the examination with particular care, and reported, as I proceeded in it, to Dr. Shellar, who wrote it down as before.

Soon after my arrival to-day her pulse, while she was sitting, was 100.

The patient lying upon her back in bed. The abdominal tumour is larger than at the first examination; its contour the same, rather more prominence in the inferior right side. Admeasurement of the abdomen, taken obliquely around it from the left hypochondrium to the right lumbar region, is forty and a quarter inches: from the right hypochondrium to the left lumbar region, thirty-seven and a half inches; and transversely around the belly above the hips, thirty-eight inches. Percussion of the abdomen is accompanied by the same sounds as before. A ridge can be felt and seen along the left of the linea alba, supposed to be the septum of the sacs. There is less pain on pressure around the umbilicus than before the first tapping. The patient says that after she was tapped there were pain and tenderness on sneezing or coughing along the left side of the mesian line, extending above and below the umbilicus three or four inches. This has continued ever since.

Examination per vaginam. The cervix uteri is slightly tumefied and pushed down nearly in contact with the perineum, and to the left of the central line. The pelvis is nearly filled with a resisting substance, the greatest resistance being on the *right* side. A hard globular body can be felt through the posterior wall of the vagina, resting against the concavity and point of the os coccygis. The uterus is pretty firmly fixed in its position, it being scarcely movable. There is no particular tenderness observable in touching the uterus.

The patient being turned upon her left side it makes no change in the condition of things.

Examination per rectum. A hard globular body is felt as soon as the finger enters the internal sphincter, pressing against the anterior wall of the gut, and carrying the latter before it so as to convert that part of the rectum into an inverted sac for its reception: the tumour projects into the rectum as if it were a tumour of the gut itself arising from its internal face. The point of the finger passed up and around its left border to its anterior face, meets an exceedingly tender point, which causes the patient to flinch suddenly and exclaim that the pain flies to her very heart. The tumour presses the walls of the rectum together, occupying the hollow of the sacrum and coccyx, and pressing pretty firmly against them, and feels like sarcoma. High up on the posterior part of the tumour, along the track of the rectum, it is very tender to the touch. The patient says she suffers more from this examination than from the one before.

I now punctured the sac on the right side, and took from it twelve and a half pints of the same clear, straw-coloured, serum-like fluid as before, making the puncture through the old cicatrix. From the left sac, which was opened about an inch to the left of the old mark, in order to avoid the overlapping sac, I removed eight and a half pints of fluid similar to the above, it being much clearer than the fluid out of the same sac at its first tapping.

After paracentesis she measures around the hips transversely thirty and a quarter inches; above the hips and umbilicus twenty-six and a half inches. In examining the abdomen I can distinctly grasp the aorta and trace it to its bifurcation, can feel the projection of the os sacrum, and the folds of the flaccid cysts, and also a singular, lobulated, oblong tumour crossing the mesian line below the projection of the sacrum, deeply seated, and inclining most to the left side. This tumour is supposed to be either the aggregated folds of the sacs, the development of other cysts or indurated deposits in

in the septum, or hardened fæces in the intestines. It is quite movable, and can easily be grasped in the fingers.

Examination per vaginam. Employing the finger gently, and without much pressure, the parts within the vagina appear very much the same as before tapping. The uterus is quite movable, can be played up and down between the finger in the vagina and the hand above the pubis. The tumour, posterior to the vagina, can be dislodged and elevated to the *right* side against the hand over the *right iliac* region. While keeping the tumour thus poised upon the finger in the vagina, and endeavouring, with the other hand, to get under the tumour above the brim of the pelvis outside, a very tender spot is encountered, which produces the same intense suffering as in the examination per rectum, and, no doubt, is owing to the same part of the tumour being touched. The tumour is very movable, and can be played up and down within the pelvis. While the tumour is elevated the pelvis seems empty. I think the tumour has enlarged since the first examination. The posterior face of the uterus is slightly tender. No abnormal condition can be detected on the left side of the uterus.

The patient having been turned upon her left side, no change is produced in the relative position of things.

Examination per rectum. The attachment of the tumour to the uterus can be pretty distinctly traced with the finger, in the rectum, placed against the posterior wall of the broad ligament, and the fingers of the other hand outside pressed deeply into the pelvis against its anterior wall, thus grasping, between them, the broad ligament. The attachment, thus examined, is supposed to be more than an inch in extent, and the tumour is quite movable upon it.

From the whole examination, I think that the morbid attachments, if any, of the sacs and tumour are very slight.

After she had recovered from the exhaustion produced by the tapping, about one hour having elapsed, her pulse was 88.

I again reviewed the symptoms and history of the case, and felt confident that it was a case of encysted ovarian dropsy; that there was a tumour of the *right* ovary; that the cysts were connected with this tumour, though they possibly might originate in the left ovary; but that there was no evidence leading to the opinion that the *left* ovary was diseased.

As my patient had now determined upon the operation, I emphatically repeated to her and her friends all I had before told her, and in addition insisted upon having the privilege of selecting a consulting surgeon to examine the case, and also share in its responsibility, should he coincide with me in opinion. Accordingly, on the 9th of March I called my brother, Dr. John L. Atlee, into consultation, and visited Mrs. S. in company with him and Dr. Shellar.

In addition to the history already given, she stated that about four years ago, while riding on horseback with a basket of marketing before her upon her arm, she felt pain of the abdomen from the pressure of the basket. She became larger on the *right* side first, and had several times called the attention of her husband to the circumstance. Ever since the first tapping she can lie best upon the left side. After both tapplings, before much fluid had accumulated, she could pass fæces without much difficulty. The œdema of the lower extremities, which existed before tapping, always diminished afterwards. Until recently there had not been much disturbance of the general health, although her constitution, for the last fifteen years, had been feeble.

To-day the abdomen is very much relaxed, and much more tender to

pressure than hitherto, particularly in the right iliac region. From the umbilicus downwards it seems to be occupied by a thick membrane or sac, which gives a dull sound on percussion, the upper border being occupied by a hard tumour about four inches long, and one and a half or two inches wide, lying transversely across the abdomen. This tumour is movable, and appears to have no connections with the uterus, and is the same tumour much increased in size, which I observed for the first time day before yesterday. Above this point, and also in the *right* iliac region, the sound is tympanitic. Her pulse is 78; the tongue is very slightly coated with a yellowish fur, but looks healthy; her appetite is good, and has been rather craving since last summer.

My brother, having made a careful examination per vaginam et anum, arrived precisely at the same conclusion that I had done: that the dropsy was encysted; that the cysts and tumours were developed in the *right* ovarium; that the uterus was slightly *atrophied*, was distinct from the diseased ovarium, except by its natural connections; that the pedicle was nearly or quite the normal length; and that no important adhesions existed. My brother fully concurred with me also in considering the operation a justifiable one, if the patient chose to have it performed. She then informed us that she had come to the conclusion herself of having the tumour extirpated; that she felt sensibly that her health had recently rapidly declined, and her sufferings were increased; that she had considered all the dangers of the operation, and desired to have it performed whenever we should deem it advisable. The opinion which I had previously given to her, was now jointly delivered again to her in the presence of her husband and sister, and the dangers of the operation fairly stated and fully understood by all the parties interested. It was then determined to wait until the cysts should become partially filled, so that the distended sacs might in some measure afford a guide to us in the operation. In the mean time she was ordered to take regular and moderate exercise, and to use nourishing light diet and mild laxatives.

March 23d, my brother and myself again visited Mrs. S., in company with Dr. Shellar. For several days after our last visit her health had not been good; she had had considerable fever, with great tenderness of the abdomen, and there was quite a hardness around the wound made by tapping, on the right side, from which, after removing the adhesive strip which covered it, a good deal of healthy pus was discharged, which afforded her great relief. After this the fever left her, the sore began to heal, and her health to improve, though the tumours continued tender, and the water rapidly accumulated in the sacs.

The abdomen is already quite prominent, and elevated to the distance of two inches above the umbilicus. The tumour which we felt in the inferior part of the abdomen, now occupies the left hypochondriac region anteriorly, and is tender upon pressure: it appears to be connected with the walls of the sacs, and to have become elevated as they became distended. The parietes of the abdomen can be pinched up from the sacs, and moved freely over their surface, even at the points where the sacs had been punctured, indicating freedom from attachments. The abscess spoken of above must have been confined to the walls of the abdomen. The patient's pulse is 90, and her health tolerably good.

We fixed upon Friday following, the 29th inst., for extirpating the diseased mass. She was ordered to continue her usual diet until Thursday morning, then to take a full dose of her laxative medicine, after which she

was to take nothing but barley water, and in the evening a few drops of elixir of opium, to quiet the peristaltic action of the bowels.

March 29th. Friday, 10 o'clock, A. M.; the patient's pulse is 86, soft, and compressible; skin soft and natural; tongue slightly red, but moist, and having a thin yellowish fur on its middle and posterior part. She had taken a dose of Epsom salts yesterday morning, which fully evacuated her bowels, after which she took ten drops of M'Munn's elixir of opium last evening, and slept pretty well nearly all night. After taking the salts she was restricted to barley water as her only nourishment. This morning she had a small liquid discharge from her bowels resembling barley water. The last time, previously to the operation, she passed her water, was between 9 and 10 o'clock, A. M., to the amount of a teacupful, which was an unusually large quantity for her to make at once. It reddened litmus paper.

Preparatory to the operation, all who were to be engaged in the manipulation of the abdomen, carefully trimmed their nails, and washed their hands, and every arrangement was made by my brother and myself previously to admitting the other medical gentlemen into the room. The patient was very comfortably fixed upon an ordinary dining table, with the leaves down, her head and shoulders were slightly raised and resting on pillows, and her feet supported upon two chairs at the lower end of the table, her hips being near the end, and covered by a sheet applied as a child's diaper; a sheet was thrown over her lower extremities, and an ordinary night-gown enveloped her body. The hair along the mesian line of the abdomen, and over the pubis, was shaved off, and the parts cleanly sponged and dried. The abdomen presented an enlargement equal to that usually found in the seventh month of pregnancy, wanting, however, its symmetry, since the tumour principally occupied the left side.

All the preparations being completed, and the patient's mind being as calm and tranquil as could be desired under the circumstances, the medical attendants were called into the room, and at the same moment a light cambric handkerchief was thrown loosely over the patient's face.

I took my position upon the right side of the patient, my brother, as principal assistant, being on the left, and in the presence of Professor D. Gilbert, Drs. Shellar, Stubbs, Gryder, Carpenter, and Cox, respectable physicians, and Messrs. Richards, Rohrer, Hershey, and Franklin, medical students, and one female attendant, I commenced the operation at eleven minutes past 11 o'clock, A. M., the patient not being in any way secured or fastened, excepting her knees and hands supported by the physicians present.

I began the incision with a scalpel, immediately below the umbilicus, and carried it down in a straight line to within one inch of the symphysis pubis, making a bold section through the skin and subcutaneous tissues, until I struck upon the sheath of the recti muscles. The adipose tissue was unusually abundant for so lean a patient. In deepening the incision about the centre of the section, the inner edge of the right rectus muscle was penetrated, in consequence of having been drawn over towards the left side by the greater prominence of the tumour in that direction. A small incision was now made through the linea alba and peritoneum, through which I introduced the probe-pointed bistoury, and slit them open to the extent of the external wound. The patient did not evince any pain until this section of the peritoneum was being made. A small branch of the epigastric artery was wounded just below the umbilicus, and another just above the pubis, requiring no ligature. As soon as the peritoneum was opened, a large white

dense sac, studded with dendriform clusters of capillary vessels, rode up against the opening. I now introduced my hand into the abdominal cavity for the purpose of examining the connections of the tumour, and of lifting it out of its bed. The contact of the hand against the internal face of the peritoneum produced considerable pain. Carrying my hand up the right side of the tumour, and over its fundus, which projected into the epigastric region, I discovered no adhesions until I arrived into the lower part of the left hypochondriac region, where I came against a ligamentous band, which could be traced in a continuous sheet along the left side down into the pelvis. Now endeavouring, with my hand behind the tumour, to tilt it out of the abdomen, I found the opening entirely too small to permit this, and as there was no effusion into the cavity of the peritoneum, and as I did not wish the contents of the sacs to escape therein, I preferred extending the incision both ways to diminishing the size of the tumour by puncturing the cysts, and thus also increasing the difficulties by rendering them flaccid. The incision below was continued to the bone, and above it was extended about three inches, rising above the umbilicus about two inches, and passing it on the left side. I was now enabled to seize the tumour with both hands, and by careful manipulation succeeded in rolling out the fundus of the tumour. The lower part of the tumour still seemed to be engaged in the pelvis, but by continuing gradual outward pressure, it suddenly arose from the pelvis with a sucking kind of sound distinctly audible. During this time there was no protrusion of the intestines, except a very small knuckle at the upper and right side of the tumour, which was easily pushed back by my brother's finger. I now carefully drew the tumour forward through the opening, and placing it into the hands of Dr. Gilbert, I turned it over upon the left side of the patient, in order to have a better opportunity of tying its pedicle, which we had supposed had originated from the *right* side of the uterus. The band previously detected upon the *left* side I considered extensive *omental* attachments, and as it bound down that side of the tumour very closely, I determined to secure the pedicle on the right side first, and afterwards everting the tumour still more, I could more easily detach the rest. To our great disappointment, however, I found no connections whatever with the *right* side of the uterus. I now changed the position of the tumour from the left side of the patient over to the right side, thus putting on the stretch and exposing to view a broad ligamentous sheet, attaching the tumour to the body of the patient by a pedicle five or six inches broad, extending from the left hypochondrium down into the pelvis. Within this ligament the sigmoid flexure of the colon was incorporated, and near its upper border approximated to within an inch of the tumour. It was also highly vascular; one vein, as large as the largest size goose-quill, ran along the tumour where it was attached, and sent out large ramifications throughout its whole extent. These veins were very much engorged with dark-coloured blood. This pedicle consisted of a double fold of peritoneum arising out of the broad ligament of the uterus, having a triangular form; its lower edge, running from the uterus to the left side of the pelvis, was several inches long; its upper edge, running from the tumour to the uplifted sigmoid flexure, was one inch in length; and the distance along the tumour, between these two edges, as above stated, five or six inches long, having the fallopian tube very much elongated and somewhat attenuated, stretched up to the top of the tumour. A surgeon's needle, armed with a waxed single strand of saddler's silk, was now passed through so as to include about one inch of the lower border of the pedicle, and firmly tied. This portion of the pedicle was then

divided near the tumour. This exposed some of the large veins upon its surface, which ruptured as soon as they were deprived of their peritoneal support, and most of the blood lost in the operation was poured out at this stage of the dissection. A second single ligature was introduced about an inch above the first, embracing several large veins and the fallopian tube, but in endeavouring to tie it the ligature broke twice, after which I substituted a double strand of saddler's silk, and secured it well. About one-half of the pedicle remaining above, through which several engorged veins inosculated, it was transfixed in the centre with a needle doubly armed with a double strand of silk, which being secured below and above, the last being very near the tumour in order to avoid the intestine, the whole connection was then separated and the tumour removed. The amount of blood lost was not more than five or six ounces, which was found in the cavity of the pelvis. This was carefully removed, and the cavity well cleansed from all coagula and fluid blood, by soft sponges pressed out of warm water. The cut ends of the pedicle were carefully examined, and there was no oozing of blood. The ligatures, four in number, having been brought out at the lower end of the wound, the latter was now carefully closed by nine harelip sutures, and intervening adhesive strips, covered with patent lint, and a soft compress, and the whole secured by a broad towel, extending from the thorax to the trochanters, around the abdomen; and the patient was comfortably placed in bed at five minutes before 12 o'clock.

During the operation the patient evinced comparatively little pain or suffering; indeed, at no time were there any manifestations of pain, except when the peritoneal lining of the abdominal parietes was touched. There was also some uneasiness noticed whenever the support to the tumour, after being dislodged, was in any way relaxed, so as to cause traction upon its attachment to the pedicle. By the time the tumour was removed the patient's pulse had fallen to 60. The respiration was not complained of, but seemed to be performed without the aid of the abdominal muscles.

In consequence of the previous judicious treatment and regimen, the intestines lay in a perfectly collapsed or quiescent state, quite free from any peristaltic action, thereby enabling the operation to proceed without embarrassment or difficulty being experienced from them. The intestines, however, presented a darker pinkish appearance than in Miss R.'s case, owing to considerable venous congestion, as was evinced by an engorged state of the veins of the mesentery. The very favourable condition of the stomach from the same cause was also pre-eminently exemplified, by the complete absence, during the operation, of all gastric irritability—no nausea, vomiting, or other uneasiness being complained of, except a slight feeling of flatulent distension, unaccompanied by eructation, a small sense of thirst, and a feeling of weakness in the first stage of the operation, which last, however, soon passed away.

There was no chilliness or sinking complained of, but the hands became somewhat cool and relaxed.

The omentum was crowded down into the left side of the pelvis, had quite a healthy aspect, and formed no attachments to the tumour. It was lifted from the pelvis, and before closing the wound, spread over the anterior face of the small intestines. The uterus was quite healthy in appearance, but considered to be slightly hypertrophied, and the *right ovary was entirely free from disease*. There were no attachments at the points where paracentesis had been performed; indeed, there were no connections whatever, excepting to the pedicle.

While engaged in dressing the wound, the patient gave directions to the persons about her in a clear and strong voice.

The operation, previously to dislocating the tumour, occupied six minutes, and eight minutes more until the tumour was removed, making fourteen minutes from the time the knife was laid upon the abdomen until the tumour was carried from the patient.

At the commencement of the operation the temperature of the room was 81°, and arose as the operation progressed to 86°. The out-door temperature at 2 o'clock, P. M., was 61°. Wind N. W. in the morning, and changed to the E. afterwards.

Before she was placed upon the table there were several eructations of wind from the stomach, and after she was placed upon the table, in raising her up to fix the pillows there was a slight eructation.

Fifteen minutes after 12 o'clock her pulse was 56; her countenance slightly pale, but not sunken; the temperature of the skin very little lower than natural; voice clear and strong; she complains of dull, deep-seated pain in the lower and internal part of the abdomen, near the seat of the ligatures. Ten minutes after the pulse rose to 66. The patient is to be restricted to cold water, no nourishment. 1½, P. M. Pulse 66; skin warmer, quite natural; tongue the same as before the operation; pain somewhat diminished; no flatulence, hiccough, or nausea. 2 o'clock, P. M. Pulse 68; the patient complains of slight sickness of the stomach, which she attributes to flatulency, and can relieve herself by eructation. 2 hours 45 minutes. Wind more troublesome, a little belching, and feeling of sickness; describes the feeling as water-brash. 3 P. M. Pulse 70; stomach more settled, skin soft and of good temperature, and the patient quite comfortable. 3½, P. M. In a natural sleep. 4, P. M. Pulse 77, heat of skin increased, patient comfortable. 7, P. M. Pulse 82, continues soft and compressible. Wind blowing very strong from the east, and raining hard. 10, P. M. Pulse 84, rather more full and resisting; skin warmer, and she complains of the hands being too warm. The tongue has not altered in appearance, but becomes dry, which is usual with her while in a recumbent posture. 11½, P. M. Drew off a half pint of urine with the catheter, in order to prevent any action of the abdominal muscles by any voluntary effort. It reddened litmus.

From this time until 3 o'clock of Saturday morning, the 30th, her pulse ranged from 78 to 84, and was soft and compressible. At this time the pulse had very slight quickness and some fulness; she had a transient flatulent pain, producing a little sickness. 6, A. M. The patient passed a very comfortable night; had no symptoms requiring attention; took a few spoonfuls of water occasionally, and dozed a good deal; complained only of dryness of the mouth and heat of the hands. Wiped her hands with a wet cloth, which was very grateful to her. Felt a desire to have her bowels moved, which passed off again. 9, A. M. Pulse has not risen above 84. Used the catheter; removed a half pint of healthy urine. Allowed the patient thin barley water. 2½, P. M. Pulse 85; a little quickness. Complains of her position; feels fatigued and sore. Had her shifted in a moderate degree; felt pain over the abdomen on being moved. Some gastric disturbance from wind. 3, P. M. Pulse 86, moderately hard; skin quite natural. Had a smart thunder gust with hail. 5, P. M. Pulse 84; complains of pain after drinking cold water. 6, P. M. Pulse 90 to 94, rather quick and full, but not hard; palms and soles warm and rather dry; tongue slightly furred, somewhat dry, but not glazed; general surface of skin about natural; has passed no wind per rectum; has had no real nausea, but a feeling of wind in

the stomach, and a desire to raise it. Removed eight ounces of deep straw-coloured urine. Moderate pressure on the abdomen—gives no pain except in the left iliac region, and that is more soreness than sharp pain. 9, P. M. Pulse 98, harder; tongue dry and furred; thirst increased; skin hotter than natural; tenderness on pressure over the whole abdomen, greater at the lower part. Dr. Cox, who remained with her at this time, bled her to the amount of about ten ounces, after which the pulse rose to 100, and became soft. 10, P. M. Pulse 98, soft and much less quick; skin natural temperature; abdominal tenderness diminished; stomach calm; the patient prefers moderately cool water to barley water.

Sunday, 31st, 1 o'clock, A. M. Pulse 95; upper part of abdomen slightly painful, lower part painful on pressure; inclined to doze; thirst not great. 7, A. M. Pulse 100; has not exceeded this. Dr. Shellar removed ten ounces of highly coloured acid urine, after which the pulse sunk to 90, soft; skin natural; slight pain in the abdomen on coughing. Passed a pretty comfortable night, and had some natural sleep, and dozed a good deal. The thermometer sunk to 22° last night, and the wind changed to the N. W. 2, P. M. Pulse 102, soft, compressible; skin natural; tongue dry, but soft; no unusual fur; it appears perfectly natural after drinking; abdomen slightly distended, sound tympanitic; no tenderness on pressure, except over the left groin; drew off about four ounces of highly coloured urine. The patient was shifted from one side of the bed to the other without any manifestation of pain; a disposition to rift up wind. As barley water sickens her, ordered her to take the water off of scalded bread or toast, and seasoned with salt. Took a teaspoonful of salts. 5, P. M. Pulse 105, harder; skin warmer, soft, and moderately moist; slight tenderness over the whole abdomen; the patient moans, relishes toast and water, and takes it freely, and it lies well on the stomach; slight borborygmi. 7, P. M. Administered injection of flaxseed tea; tenderness of the abdomen diminished; pulse 106, compressible. 8, P. M. Pulse 105, softer; injection operated about five minutes ago, had a fetid smell, and was accompanied with much wind; less heat of skin; scarcely any pain on pressure, except in the lower part of the abdomen. 10, P. M. Pulse 103; has had quite a refreshing sleep; drew off five ounces of highly coloured urine. 11½, P. M. Pulse 102; has been sleeping; Dr. Shellar administered another injection of flaxseed tea, with five drops of elixir of opium in it; complains of water-brash directly after drinking; tosses about the arms, and draws up her knees occasionally. 12 o'clock. Pulse 100, soft; skin soft and natural; less dryness of hands; lies perfectly easy; is in a perfectly natural sleep; very little tenderness of the abdomen.

2 o'clock, A. M. Monday, April 1st. Pulse 100; gave a teaspoonful of salts. 5, A. M. Pulse 98; has been rather restless since 3, A. M. 6, A. M. Pulse 96; no operation on the bowels; gave another injection, which operated soon; stools liquid, and very fetid; mouth more moist; thirst still considerable. 9, A. M. Pulse 96; skin cooler; bowels continued open during the last hour. 10½, A. M. Pulse 97 and soft; drew off half a pint of highly coloured urine; skin soft and pleasant; inclined the patient towards the left side. 7, P. M. Pulse 100; the patient moans; thirst; abdomen tympanitic; complains of slight pain on pressure; sickness of the stomach after drinking; palms and soles dry; administered an injection of flaxseed tea; drew off four ounces of urine highly coloured. 8½, P. M. Injection passed with a good deal of wind of a fetid smell. 10, P. M. Pulse 98, soft; has had a good sleep; gave an injection. 11, P. M. Pulse 96; skin moist;

passed injection with considerable wind and some natural stool, and less fetid.

Tuesday, April 2d, 2, A. M. Dr. Shellar gave her a teaspoonful of weak mint tea, which relieved her stomach of wind, and made her quite easy; pulse 96. 6, A. M. Pulse 97; passed urine herself with griping pain; borborygmi with frequent discharges of wind per anum. Slept a good deal during the night. 8, A. M. Pulse 95; skin moist; had two black stools since 6 o'clock, of a sour disagreeable smell. 9, A. M. Pulse 96; griping of the bowels; palms and soles dry and hot; no pain on pressure over the stomach. 10½ A. M. Griping and frequent moaning since 9 o'clock; discharged urine of a very disagreeable smell. 12½, P. M. Administered half a teaspoonful of oil. 1½, P. M. Pulse 96, compressible; a fluid of a brick dust colour, and of a very disagreeable smell, works up occasionally from the stomach; discharged per anum a good deal of wind of a very disagreeable smell. 3, P. M. Pulse 95; urinated an hour since; gave a half spoonful of oil, which was followed in half an hour by a stool of the natural colour, and in half an hour afterwards another of the same kind. 4½, P. M. The patient visited by Dr. J. L. Atlee. The general symptoms favourable; pulse 100; skin natural, nose warm, cheeks cool, palms rather warmer than the rest of the body; wound dry; frequent eructations of wind, with ejections from the stomach of a yellowish offensive fluid, possessing a smell similar to that of the stools, but more faint and less fetid; has had two small yellowish stools, evidently bile; says the eructations are bitter, not sour; no general tenderness of the abdomen, but from the left side upwards there is some tenderness, diminishing as we ascend; there is considerable distension along the whole track of the colon. 8, P. M. Pulse 100, small and weak; skin as before; has thrown off the water occasionally which she takes for several hours past; distension continues. Gave a flaxseed injection with a tablespoonful of the aqueous solution of assafoetida. 9, P. M. Dr. Shellar has the patient in charge to-night. She has had a half an hour of sound sleep; pulse 100; skin of the natural temperature; still troubled with eructations of the same nature as during the afternoon, though not so frequently; some of the injection discharged with some flatus; not much tenderness of the abdomen, still distended. Repeated the assafoetida injection, which brought away a great deal of wind, but no feculent discharge. Passed urine voluntarily, being very highly coloured and having a strong smell. 10½, P. M. Symptoms the same, hands cool; gave ol. ricini et spirits tereb. aa ʒss. 11, P. M. Pulse 102; ejected some of the medicine.

1½, A. M. Wednesday, April 3d. Pulse 102; hands warm; other symptoms the same; discharged a large quantity of wind; then fell asleep soundly for three quarters of an hour; complains of a burning in the throat and stomach, caused by the medicine; eructations not so frequent. 2, A. M. Pulse 102, compressible; symptoms the same, excepting that she feels easier and can sleep; gave an injection. 3, A. M. Pulse 104; tenderness of the epigastrium and general uneasiness; discharges wind per rectum. 4¾, A. M. Pulse 124; abstracted from the arm about three ounces of blood, after which the pulse sunk to 114; hands and face cool; eructations returned; discharged urine. 6, A. M. Pulse 120; hands getting warmer by the application of warm cloths; sickness and eructations of the stomach continue. An express was sent off at 4½, A. M. from Mr. S., distance 10 miles, by Dr. Shellar, to Lancaster, desiring our immediate attendance, and intimating the most unfavourable turn to the patient's symptoms. I arrived at 8½, A. M.,

but found the patient rapidly sinking, the pulse being almost imperceptible, and too frequent to be counted; the hands and wrists cold and clammy; and very great distension along both sides and in the epigastrium, the abdomen less elevated along the track of the wound. Fearing some intestinal obstruction, perhaps incarceration of a portion of the intestine in the track of the wound, as in one of Mr. Walne's cases, I examined the wound carefully, withdrew all the needles, but could discover no cause existing there. Fearing that the ligature near the sigmoid flexure might have strangulated that part of the colon, I endeavoured to introduce a rectum tube, but could not succeed in passing it in more than four or five inches. In surveying the obstruction in the rectum with my finger, *I struck again against the same tumour which we had encountered in all our examinations before the operation*, but thought it might be nothing more than a knuckle of intestine very much distended, and occupying the same location. I now administered injections of turpentine and gave brandy and water, but without avail, and the patient sank into the arms of death at three-quarters past 9, A. M.

Autopsy one hour after death.—The abdomen externally was found sunk along the track of the wound, particularly about the umbilicus; it was prominent along both sides, most so on the right, and was marked by very great fulness of the epigastrium; a depression existed between the epigastrium and each side.

The whole wound was united excepting a quarter of an inch at the umbilicus, and half an inch where the ligatures came out. The adhesions could be easily overcome by separating the edges with the fingers. Opposite the umbilicus, where the point of non-adhesion was, there was a small collection of bloody matter outside of the omentum, and also a small deposit of coagulated blood at the same place. The muscular or internal lips of the wound were slightly separated, between which the omentum was moderately elevated, but had no appearance of strangulation. Very slight adhesions existed between the anterior walls of the abdomen and the great omentum, this latter being spread over the intestines very much as we had placed it at the time of the operation. It was somewhat injected with arterial blood, and slightly inflamed, and its veins were congested. In endeavouring to raise the omentum from the small intestines, it was found to be attached to them, particularly at its lower extremity, and it appeared to dip down into the left side of the pelvis. In detaching it a considerable gush of serum rose up out of the left side of the pelvis. By raising the omentum the convolutions of the small intestines were discovered to be inflated, and suffused with a bright vermilion tint, particularly those most adjacent to the pelvis, and they were agglutinated by a soft albuminous exudation. The small intestines also adhered to the peritoneum lining the parietes of the abdomen at those points where the omentum did not intervene. The ileum was the most intensely inflamed, particularly near the valve of Bauhin, and a thick coat of lymph was deposited between its folds, and so bound down its convolutions as effectually to strangle the bowel; there was also considerable distension of it, but the greatest distension was in the jejunum and duodenum. The stomach was greatly distended, but not much injected. The cæcum was moderately distended, but the ascending, transverse, and upper part of the descending colon was empty and very much contracted. A small quantity of flatus was in the lower part of the descending colon, but the sigmoid flexure was very much contracted and inflamed; the rectum being less so. The transverse colon particularly, was very firmly contracted and inflamed, having a bloody spotted appearance, and the omentum attached to it was very much injected. A

dense deposit of dull-white lymph was found about the intestines in the left lumbar region. On separating the folds of the intestines, a large quantity of sero-purulent fluid escaped, particularly from the iliac and pelvic fossæ. In some of the interspaces there was actual pus, appearing like small abscesses.

The pelvic viscera were glued together. The right ovary was seen in the same condition as at the time of the operation, excepting that it had formed loose attachments to the parts around. The womb was considered somewhat hypertrophied for a person at her age.

We now determined to remove the womb, right ovary, rectum, sigmoid flexure, and the remains of the pedicle, with the ligatures attached. After relieving the viscera of all their surrounding attachments, and passing the hand deeply into the pelvis to raise them out, a *globular cyst, about the size of an orange*, was lifted up from the deepest part of the pelvis, and was found to be pendulous from the *right ovary*. The uterus was severed just below its cervix before its removal, and there issued from its cavity, at the points of section, a yellowish thick gelatinous fluid.

On examining the parts after their removal, the first ligature was found to be attached to the posterior wall of the broad ligament, including the round ligament, near the body of the uterus, and about a quarter of an inch beneath the fallopian tube. The second enveloped the fallopian tube and large vessels about two inches from the uterus. The third also enclosed the fallopian tube and vessels about half an inch further on. And the fourth included the sheet of membrane and vessels between the tumour and sigmoid flexure, about half an inch distance from the latter. The examination of the parts on the right side of the uterus was exceedingly interesting and satisfactory: *the right ovary was healthy*, there being no cystic degeneration within it or the fallopian tube, and having no immediate connection with the cyst which had occupied the pelvis on the right side. The cyst had its origin *exclusively in the broad ligament*, projecting from its posterior walls, had a pedicle about two inches broad, was suspended at a distance of one inch at least from the fallopian tube and ovary, the latter being entirely free, and its distance from the body of the uterus was about one inch and a quarter, it being supported on that part of its pedicle by the round ligament. The cyst must have occupied the recto-vaginal cul de sac of the peritoneum, and must have been driven down against the coccyx by the distended cysts of the left ovarium. Its very low position in the pelvis may be understood when it is mentioned that the anterior duplicature of the peritoneum was reflected off from the broad ligament to the pubic portion of the pelvis, about half an inch above the highest portion of the cyst, and that the same point of the latter was at least two and a half inches below the fundus of the uterus. The uterus was lined with a beautiful velvety scarlet membrane; the orificium internum was studded with diaphanous papillary vesicles, which, on being cut, effused a gelatinous kind of fluid; the dilated part of the cavity, corresponding with the cervix, was plainly marked by the ridges denominated *arbor vitæ uterinus*. The uterus was about three inches long, two inches wide, and its walls about half an inch thick, being perfectly healthy in structure. The sigmoid flexure attached to the detached parts was contracted in size, and very much inflamed, particularly near the ligature around the pedicle. This very interesting specimen I have carefully preserved.

Description of the extirpated tumour. The tumour, immediately after the operation, weighed ten and a quarter pounds; it lost three-quarters of a pound weight in twelve days, being suspended in diluted alcohol, after which the following observations were made. The greatest circumference

of the tumour is two feet nine inches, the smallest two feet. Its shape is irregularly pyriform, with a cordiform indentation at its narrowest end. The marks of the trocar are plainly visible, and, when placed in a horizontal line, indicate very accurately the position of the tumour within the abdomen at the time of tapping. The cordiform indentation, with its bulging lips on each side, occupied the pelvis, and most probably received within it the fundus uteri. The larger end of the tumour occupied the epigastrium, and the septum between the cysts, two of which constituted the entire tumour, run obliquely down on the left of the linea alba, gradually approaching it in its descent. It was very evident, from comparing the old with the recent marks of the trocar, that the tumour had changed its position to a small extent after the first tapping, and that the upper portion was thrown over more to the left, and the lower to the right side. The pedicle had a most extensive attachment to the tumour. Starting at the inferior portion of the septum, by the insertion of the round ligament, it sweeps around the bulging part of the left side of the tumour, and returning again to the septum terminates in the fundus of the tumour, making an attachment of thirteen and a half inches in length, even in this state of the sacs, they being only half filled with fluid. This measurement includes several inches of the pedicle which were not touched by the knife. The length of the cut portion, measured on the tumour, is nine and a half inches, and the part of the fallopian tube, attached to the tumour, is five and a half inches in length, which, added to the uterine portion, gives the great length of eight or nine inches. The fallopian tube terminates in a dense mass in the fundus of the tumour, which appears to be the ovary disintegrated and diffused through the structure of the cyst in that part, and the fimbriated extremity is stretched over a considerable space on the posterior wall of the fundus. This is much the most dense part of the cysts, excepting the septum, which forms dense ridges upon the surface of the tumour, and plainly points out its own location. The right sac is the largest. The walls of the cysts are a very dense white structure, interspersed with a few transparent spots.

From the position of the sigmoid flexure, and its connection with the pedicle, I have no doubt that as the cysts became developed, they elevated the posterior fold of the broad ligament as it is reflected off to the sigmoid flexure, and stretching it as they enlarged, thus elevated the intestine and involved it in the pedicle. Indeed, from the circumstance of the round ligament being inserted in the *lower* part of the septum, and the fimbriated extremity of the fallopian tube being spread upon its *upper* part, with the whole tube swinging entirely free of the tumour, there is every reason to believe that it originated, like the other cyst, in the posterior walls of the broad ligament, and in this way more readily involved this intestine.

Remarks.—I have given this unfortunate case in *full detail*, in a conscientious spirit of truth and candour, because it is an *unsuccessful* one. It is not so much to avoid the censure of “keeping studiously and carefully from the public eye the unsuccessful cases of the operation,” (Mr. Lawrence,) which is a species of dishonesty and empiricism deserving unqualified condemnation, as to do an act of *professional duty* peremptorily required by the unsettled position of this operation in the minds of the most eminent surgeons, that induces me to its publication. I have carefully avoided giving any *colour* to the case, save what its symptoms have expressed, and

I am perfectly willing to furnish it as one of the numerical arguments against ovariectomy. Still, candidly admitting the case to be fairly one of unsuccess, notwithstanding the mitigating circumstances of age, constitution, and insidious inflammation, I as confidently as ever consider the operation justifiable in appropriate cases of a disease otherwise desperate and incurable, and where it "*secures the only remaining chance of life.*"—(Blundel, *Medical Examiner.*)

In reviewing the history and symptoms of this case, it must be admitted that every thing led to the opinion of the *right* ovary alone being diseased: pain in the *right* side, neuralgia of the *right* thigh, tumour in the *right* side of the pelvis crowding the uterus to the *left*, pressure elevating this tumour into the *right* groin, evident attachments of the tumour to the *right* side of the uterus, nothing abnormal occupying the *left* side of uterus—each, singly, drew attention to the *right* ovary, and, collectively, almost indubitably indicated the location of the disease. On the other hand, the swelling of the *left* leg, and the *flat* sound over the *left* lumbar region after tapping, were the only symptoms which could draw attention to the *left* ovary. The first symptom could be explained by the peculiar anatomical arrangement of the iliac vessels; for, according to my observation, it is a fact, only explicable, in my opinion, by the anatomy of certain parts, that the *left* leg is more liable to œdema, varicose veins, &c., resulting from pressure within the abdomen, as in pregnancy, &c., than the *right* leg. The right common iliac artery, traversing the left common iliac vein, just below its termination in the ascending cava, and where it lies upon the resisting prominence of the fifth lumbar vertebra, must necessarily obstruct the circulation in the *inelastic* vein whenever subjected to the insistent pressure of a tumour, and thus impeding the whole venous circulation of the left leg, while the supply of blood would be continued through the *elastic resisting* artery, lead to an œdematous or a varicose state of this limb sooner than the other. The second symptom, or dulness of sound, could be explained by supposing that the flaccid cyst might be retained in the left lumbar region by omental adhesions, a circumstance not at all unusual in ovarian tumour. With this explanation, the conclusion, that the disease was in the *right* ovary was irresistible.

The operation, therefore, was commenced with every confidence of finding the pedicle of the tumour attached to the *right* side of the uterus, and our astonishment was great in discovering the tumour, *at this point*, entirely free; and its pedicle, which was the only attachment, arising out of the *opposite* side. Although this circumstance could not affect the course or the result of the operation, it yet so conflicted with the diagnosis as to convince us of the truth of the *antecedent* of the enthymeme, assumed by those unfavourable to gastrotomy, that the "very impossibility of knowing beforehand the *exact* condition of the organs which it is proposed to extirpate forms one of the strongest arguments against the operation," (*The British and Foreign*

Medical Review,) without establishing the *consequent* deduced from it. Desiring, however, to explain the contradiction, we considered that the lower end of the cysts, which had been wedged into the pelvis, had been tilted over upon the *right* side of the uterus, and dipping deeply down had simulated the *tumour*, which we had previously felt in that location, and that that portion of the cysts contained an indurated portion of the ovary, which had continued *in situ* after the fluid had been removed. In order, however, fully to satisfy ourselves that the *right* ovary was not diseased, I took it up in my fingers, with the fallopian tube, and a considerable portion of broad ligament, examined it carefully, and exhibited it to the gentlemen around. We all considered it *healthy*, and so it was pronounced. Had our patient recovered after the operation, the true state of things could never have been known, and the case would have been reported in accordance with the above state of facts. The consequence would have been, that *her disease would have returned*, and its return would have been attributed to a *subsequent development of diseased action* in the right ovary, which had been perfectly *healthy at the time of the operation*. Here then would have been another blow to the advocates of gastrotomy, so that living or dead the case would have been used against them. In order, therefore, to make the operation doubly sure, the extirpation of both ovaria, the *healthy* as well as diseased, would have to be resorted to—a course which I had previously contemplated in patients who had passed the climacteric period of life. The patient, however, died, and was subjected to a post-mortem examination. This revealed a state of things which was equally as astonishing, and which, although apparently contradicting the unanimous opinion expressed at the time of the operation, *essentially confirmed the diagnosis: there was a tumour attached to the right side of the uterus*. It was this very tumour that had been felt previously to the operation, and also after it while employing the rectum tube when the patient was moribund. It was only discoverable per vaginam vel per rectum, and was entirely out of view when the abdomen was opened and the pelvis examined through its superior strait, both during the operation and the autopsy. Now it is such cases as this that often leads to the most important precautions in practice, and in a similar case *I would not close the wound until I had fully satisfied myself by a vaginal examination*. The publication of this case, therefore, may produce this, if no other good in ovariectomy: establish the rule *never to finish the operation without such an examination*. It must be very evident that the mere survey of the ovary is by no means sufficient, and that the cases of return of this disease on record may be accounted for in this way. An examination of this kind, in addition, is thorough, is the only way to avoid difficulty, and to clear up all doubt.

In reference to the cause of death, *peritonitis*, there were none of the ordinary indications of this disease, nor any symptoms requiring particular treatment, until the evening of the fifth day. Indeed, it was a matter of

general surprise, how little disturbance so great a wound had produced, and that not a single unfavourable symptom arose during or for several days after the operation. I have no doubt, from the post-mortem appearances, that inflammation supervened before the fifth day, and that this was one of those anomalous cases of peritonitis, which steals on insidiously, where the bowels act without impediment, where vomiting and unusual gastric irritation do not exist, where the pulse seldom exceeds 100, and where the state of the skin continues natural, and even where tenderness of the abdomen is not remarkable. There had been no rigors; no acute pain, nor great distress from pressure, nor feeling of incumbrance from the bed-clothes; no obstinate constipation; no nausea and vomiting until the last evening; no dry and hot skin; no rapid, small, and hard pulse; no white furred tongue and dry lips; nothing indicating inflammation of the peritoneum. The tenderness of the abdomen and flatulency, the only symptoms, were not at all remarkable, and not greater than would be likely to arise from the healthy inflammation of such a wound. By this apparently very favourable condition of the patient we were lulled into inaction, and at the very time we were congratulating her and ourselves upon her having passed the time of greatest danger so well, the disease, no doubt, was quietly making the most dreadful havoc. Had the usual evidences of peritonitis existed, we were prepared and watching to meet them in their onset, and thus met they most probably would have succumbed to our measures. The question may here be asked,—had age, or the shock from the operation, or both together, any agency in so diminishing the susceptibility of the system as to render it incapable of *noticing* this state of things? The nervous shock was certainly not great, and gradual and apparently wholesome reaction supervened in good time. Her age, therefore, conjoined with a feeble and debilitated constitution, may perhaps account for the want of the necessary elasticity of fibre.

The extreme sensitiveness of the peritoneum, and the congested state of the mesenteric veins at the time of the operation, may have had considerable influence in causing peritonitis. The section of the peritoneum, and the friction of the hand against it, produced infinitely greater manifestations of suffering than any other part of the operation. This did not exist in my brother's case, and it is not stated as having occurred in any other that I have seen reported. It was, however, remarkable in this instance, and excited the attention of all present.*

* Another instance of extensive exposure of the peritoneum, occurred in my practice in June, 1830. I was called to see Master D. L., a lad about ten years old, who had been attacked by a furious cow, which had just calved. She threw him down into the corner of a worm-fence, and gored him most dreadfully. The most serious wound was in the walls of the abdomen: the point of the horn entered at the superior spinous process of the ilium on one side, crossed the abdomen transversely, and came out at the same point on the opposite side, ripping open the whole intermediate space. The wound gaped at least three inches, owing to the retraction of the divided muscular fibres. Fortunately the peritoneum was not wounded. The point of the horn appeared to have insinuated

Another circumstance, which I believe is unique in this case, is the implication of the intestine within the pedicle of the tumour. In Professor Lizar's third case, and in Dr. Chrysmar's first case, both of which proved fatal, the former in 53, the latter in 36 hours, there were adhesions of the colon to the tumour, (*The British and Foreign Medical Review*,) but in neither of these cases was it involved within the pedicle. In this case it was, and so closely approximated the tumour, that only one inch of pedicle existed between the two, upon which to apply the ligature. At this point on the intestine, and in the adjacent small intestines, the marks of inflammation were intense. Did the inflammation originate here and radiate to the parts contiguous? Pathologists inform us that the effect of contact in propagating serous inflammation, is more obvious than that of continuity.

This case would seem to show that tapping, either as an aid to diagnosis, or prospective to an operation, is not objectionable as inducing adhesions. Dr. Frederick Bird is of the same opinion. (*Braithwaite's Retrospect*.) Dr. Charles Clay, however, is "averse to puncturing, because at the places punctured adhesions are effected, and by the alternate distension and collapse of the sac, fresh adhesions are also formed in other parts." (*Ibid.*) In my case not the least adhesions existed, notwithstanding suppurative inflammation supervened in the abdominal walls after one of the tapplings, a circumstance highly calculated to produce them.

It must have been observed in the report of this case, that before the operation the uterus was considered *atrophied*, and that during the operation, and also at the autopsy, it was considered *hypertrophied* for the age of the patient. Its exact measurement is given, and it corresponds with the size of a healthy womb in the child-bearing period of life. Could both conditions have existed at the several periods of observation? The query is of no moment excepting as connected with the diagnosis, and may, I think, reasonably be answered in the affirmative. It possibly was in a state of atrophy, and may have become hypertrophied by subsequently increased action within itself, as was

itself between the peritoneum lining the parietes and the fascia transversalis, and the convex body of the horn skated upon the peritoneum without tearing it; every thing anterior to it was ripped asunder, and a clean, even, incised-like wound remained! The convolutions of the bowels were plainly visible through the semi-transparent peritoneum, which was the only thing that prevented their escape, being placed like a glass in front of them. In riding hastily to the place I lost my case of instruments, and had nothing but a roll of adhesive plaster with which to dress this extensive wound. I, however, brought the lips of the wound carefully together, and secured them with very long straps of plaster, without the aid of a single ligature. Then placing the patient on his back with the shoulders and hips elevated, I gave a dose of laudanum to keep the bowels quiet, placed him on absolute diet, and had him watched night and day to prevent motion of the body. Continuing rigidly this let-alone treatment for several days, the whole wound healed up by the first intention. The bowels were acted on for the first time by oil on the fifth day, and the patient recovered without a bad symptom. In this case also, no tenderness of the peritoneum was evinced by handling.

indicated by an augmentation of tenderness at and after the second tapping. The relative position of the tumour and the womb, the top of the former, after the removal of the parts, being two and a half inches below the fundus of the latter, may perhaps have misled us in regard to its atrophied state, as the *cervix uteri* corresponded with the body of the tumour, and may have been mistaken for the womb itself.

Aiding in the diagnosis of our case, there was one very prominent symptom, which I do not remember of having seen noticed by writers in any other, but which I think would generally obtain in encysted dropsy: *the pulsations of the abdominal tumour, and the impulse of the aorta.* In great abdominal enlargement, under the very circumstances when the difficulty of distinguishing between peritoneal and ovarian dropsies arises, I think that this would be a *pathognomonic* feature of great value. The impulse of the aorta upon the resisting walls of a distended cyst, would communicate fluctuation in all directions, in the same way that the impulsion of the fingers upon the walls of the abdomen produces a corresponding motion in ascites, while at the same time the aortic impulse in the latter, for apparent reasons, would be exceedingly feeble or not at all recognizable. In Miss R.'s case, the only thing in dispute between my brother and myself remaining unsettled until the operation, was in relation to the character of the dropsy. It was *ovarian* tumour and *peritoneal* dropsy, a case entirely unique in the medical records accessible at the time. Taking all the diagnostic indications collectively, it was admitted on both sides, that its character was obscure. In that case the abdominal pulsation was absent.

It is worthy of being observed that the fluid drawn from these cysts, was different from that which we find in the majority of cases, and as this is esteemed one of the most valuable diagnostic signs, I desire to refer to it here. Dr. Alexander Kilgour, who furnishes some valuable hints on the diagnosis of ovarian disease, observes that "in most cases of encysted ovarian dropsy the fluid is thicker than serum, flowing through the canula of the consistence of train oil, of a greenish or dark colour, and of a saponaceous feel. Sometimes it is grumous, like drained honey, or like jelly; or it assumes these characters as the sac becomes emptied. Nitric acid added to it produces a thick coagulum, and so also does boiling. When these characters are present, there can be no doubt as to the nature of the dropsy." (*Am. Journ. Med. Sci.*, Oct. 1843, p. 489.) This is true, and such a fluid unfailingly distinguishes ovarian dropsy from every thing else. But there are cases of ovarian dropsy, not alone "unilocular," where the fluid is not so easily distinguished from that of ascites, and where, if we possessed no collateral aid in diagnosis, it could not serve us in deciding upon the nature of the disease. Such was this case. The physical characters of the fluid corresponded in density, colour, and transparency, with ascitic; and its chemical character, as tested by heat and nitric acid, exhibited similar evidence to that of ascites, tested in

two instances since. The only difference discoverable between the two fluids was in the amount of albumen, the ovarian containing more, and therefore being more densely coagulable than the peritoneal. This property, therefore, not being exclusive, will not always be available as a characteristic sign, and it being only relative in degree, must prove uncertain in inexperienced hands, particularly when not associated with distinguishing physical characters.

I would also call attention to the condition of the cysts after tapping. They were collapsed into folds and ridges, which could be felt plainly within the cavity, and entirely distinct from the walls of the abdomen. How far the position of the cysts after paracentesis will diagnosticate adhesions may be presumed from this case, in which none existed. The effect of attachments between the cyst and walls of the abdomen would no doubt be a proportionate augmentation in the thickness of these walls, with a feeling of *double* folds in pinching them up between the fingers. Where the sac has receded from the walls of the abdomen, and forms rugæ within, there is strong presumption, if not absolute certainty, of the absence of adhesions, at least to the abdominal parietes. This state of the cysts also affords very strong pathognomonic evidence, for in ascites nothing of this kind would be presented.

The fact of the tumour having been composed of only two large cysts, free from adhesions, and independent of any great amount of solid deposit within its walls, would appear to render it a case peculiarly adapted to Jeaffreson's operation, but the great extent of the pedicle, its investment of the colon, and the proximity of the latter to the cysts, would plainly have rendered it equally, if not more immediately hazardous. Jeaffreson's operation, particularly as modified by Dr. Frederick Bird, is certainly worthy of imitation, but in many cases must necessarily yield to the large peritoneal section.

In peritoneal sections for the extirpation of ovaria I have thought that there might be less liability to inflammation than in wounds where such or similar disease does not exist. The constant friction of the tumour, and the distension of the peritoneum, may tend towards obtunding its sensibility, and rendering it less liable to react upon the application of irritants. In the above case, however, there evidently was a morbid state of irritability, a state of hyperemia existing in this membrane at the time of the operation, unusual in other cases, rendering it more liable to inflammatory action. With this view of the case, I doubt whether we "should be justified in making extensive incisions into the abdominal cavity for other objects than the one here related," (Dr. Charles Clay, *Braithwaite's Retrospect*,) basing the propriety of such operations merely upon the success of ovarian cases.

The British Medical Journals, in reviewing the cases of Dr. Charles Clay, and others, speak decidedly against the operation of gastrotomy. As the subject has become one of vital importance, and as this has been styled an American operation, I propose concluding my paper by noticing one or two points in the English Journals.

One writer, in the general scope of his paper, takes a candid and fair view of Clay's and other operations, and very properly corrects some of the statistical errors which Dr. Clay permitted himself to embrace in his report. However much it must be regretted that any member of the profession, as distinguished as Dr. Clay, should attempt to establish an operation by unfair means, or by disparaging and misrepresenting the manner of operating and success of other surgeons, still it must be equally regretted that his reviewers should place the *merits* of the major operation in juxtaposition with the errors of Dr. Clay, and thus condemn *together* what are essentially disconnected, and decry the value of the one with the same breath used in combating the other.

One of the principal objections brought forward by the British writers is *the difficulty of forming a diagnosis in cases of ovarian diseases*. "The impossibility of ascertaining either the existence of any disease of the ovaries, the real character of such disease, or the adhesions or connections which it may have originally held, or have formed during the progress of its growth, has been freely granted by every experienced physician and surgeon who has directed his attention to the subject, and is also made abundantly manifest by the cases of extirpation which have been recently recorded." (*The London and Edinburgh Monthly Journal of Medical Sciences*.) The "very impossibility of knowing beforehand the exact condition of the organs which it is proposed to extirpate, forms, in our opinion, one of the strongest arguments against the operation; and will always do so until we are furnished with some unerring means of distinguishing between simple ovarian tumours and cases in which ovarian cysts are associated with other diseases of those organs." (*The British and Foreign Medical Review*.) That there is a difficulty in diagnosis in some cases must be admitted, and in such the whole force of the argument ought preemptorily to operate. Some of the fatal cases referred to by the writers, I think would be obnoxious to this charge, and ought to exhibit more the temerity of the surgeon in undertaking ovariectomy where the diagnosis was obscure, or the malignancy of the tumour, and other circumstances, contraindicated it, than to undervalue a well-judged and well-timed operation in cases where nothing objectionable obtains. While, however, admitting the position in some cases, we do consider it untenable in others, and cannot admit that there is an *impossibility* of knowing the condition of things beforehand in *all* cases. The possibility of correct diagnosis, at least as to the *existence* of ovarian disease, and in reference to the propriety of an operation, I consider has been sufficiently proved by the many successful, and even unsuccessful cases of peritoneal section, and also by post-mortem observations where no such operation had been performed. And although errors may have occurred in certain cases, nothing less has happened in other kinds of surgery, where operations are acknowledged to be legitimate and proper. If, then, cases do occur, where doubt does not exist, ought the operation to be performed? The several successful cases,

both of the minor and major operation, and the character of the disease to be remedied, speak sufficiently in the affirmative, and the writers themselves, in such cases, would not raise an objection, if a fair inference may be drawn from the above quotations.

Another objection is *the danger of hemorrhage*. "The extent to which the incisions must be carried, and the adhesions which must be destroyed in many cases before the tumours can be removed, would lead us, *a priori*, to dread the consequences of loss of blood." (*The London and Edinburgh Monthly Journal*.) It is rather surprising that this should have been offered as a serious objection against the operation, when we consider how rare hemorrhage has been in these cases, and how perfectly easy it is to control it by the careful application of ligatures. Is there one case on record where the cause of death could be legitimately traced to hemorrhage? Even in Mr. M'Dowell's third case, and in Mr. Lizar's second case, where hemorrhage was profuse, death did not occur; and in Mr. Clay's fifth case, where death did occur, the hemorrhage, apart from other violence, was not so great as solely to account for the result. And whence is the great fear of hemorrhage *a priori*? Large and important vessels seldom exist in the pedicle of ovarian cysts and tumours, and the attachments, which the latter may have formed with the surrounding parts, when organized, are supplied with the smaller class of vessels, while the extensive incisions through the skin involve no arteries worthy of notice.

After giving details of several successful cases, it is observed: "All must, we think, agree with us in the opinion that the mere announcement that these thirteen persons recovered from the operation, would by no means suffice to enable us to estimate it aright. The sufferings endured during its performance, the pains of a protracted convalescence, and the imminent danger in which life was placed in some instances, ought all to be taken into account. The sufferings and the danger too, in these cases, were neither few nor small." (*The British and Foreign Medical Review*.) The fact, I fear, has been overlooked that in other capital operations, legitimated by time and results, all the above circumstances occur, and that suffering, pain, and danger, are necessary accompaniments. To balance this, look at the ovarian patient condemned, by the opponents to extirpation, to uninterrupted misery, to interminable sufferings, to all the agony and inconvenience of obstructed circulation, respiration, defecation and the functions of all the pelvic, abdominal and thoracic viscera; condemned to certain death by a protracted, incurable, burthensome disease, draining her system of its usual pabulum, depriving her of exercise and the pure air and light of heaven, and oppressing her with a loathsome enormous mass too great for her enfeebled, emaciated frame to carry. Thus metamorphosed, in the depth of her agony and affliction, she appeals to us for assistance, and though life may be the forfeiture, she stakes it willingly. What is to be done? Take every thing into the esti-

mate, and is not the operation not only justifiable, but sometimes criminally omitted?

It is also observed, that "there are objections, however, to the operations, far more conclusive than any which can be deduced from the inadequate nature of the testimony in its favour. Not only did six of the persons, whose ovaries were extirpated, die from the effects of the operation, but in eight instances, after the abdominal cavity had been laid open, the removal of the tumour was found impracticable, and the lives of three of these patients were sacrificed to the fruitless and ill-judged interference of the surgeon." (*Ibid.*) What capital operation, I would ask, is exempt from such a charge? The victims of the knife have been numberless in almost every branch of operative surgery: bladders have been cut for stone without finding any, legs have been amputated that ought to have been saved, hatfuls of eyes have been destroyed without restoring vision, aneurisms have been opened believing them to be abscesses, and a variety of other malpractice must occur to the mind of every surgeon. Does it follow from this that the operations of lithotomy, amputation, cataract, and the lancing of abscesses ought to be condemned? Is fruitless, ill-judged, or ill-directed surgery in a few instances, to be adduced in condemnation of any operation? I apprehend not. Why then not place gastrotomy upon the same footing? As a new operation, undergoing a course of probation, it is perhaps equally as successful at this age of its history, as some other operations, now established, were in their early infancy, and which, even now, occasionally illustrate the improper and fruitless interference of the surgeon. Upon this principle, operative surgery would become obsolete.

Certain writers also throw out some very improper insinuations upon the motives of the younger members of the profession, who undertake what older surgeons "are reluctant to attempt." After representing this operation as exceedingly hazardous and fatal, and then accusing the young surgeon of endeavouring to advance his reputation by "exciting the astonishment of the vulgar," they must have forgotten the self-contradiction of their position, and the danger of young surgeons seeking professional *eclat* where *censure* only was to be encountered. And why thus assail the junior members of the profession? Where is the time-honoured surgeon, bending under the weight of years, and enjoying the full fruition of a successful career, that has not laid the foundation of his fame before time has *begun* to mark his temples with the frosts of age? Whence have sprung the great improvements of our art? Have they not mainly originated with men in the prime and vigour of life, before age began to enervate the mind, or routine to fix the habit? Then let it not be said that because the "aged and the timorous are reluctant to attempt" an operation, that the younger man, emboldened by assiduous investigation and new discoveries, should be censured for the innovation. The oath, "Nullius unquam hominis vitam ancipiti tentaturum experimento,"

fortunately for gastrotomy, does not include the whole of medical morality; the principle will be more complete by adding, in English, *and the life of no one should ever be sacrificed to a necessarily fatal disease when art can prevent it.* On this point the beautiful language of Hufeland is quoted: "Thine is a high and holy office, see that thou exercise it purely, not for thine own advancement, not for thine own honour, but for the glory of God, and the good of thy neighbour. Hereafter thou wilt have to give an account of it." There are sins of *omission* as well as of commission. 'The *good* of our neighbour, and our professional *duty*, always obligate us to *risk* our reputation in contributing to the one, and in properly exercising the other; and if, when relief can be afforded in a horrible and fatal disease, we are unwilling to *hazard* our fame, or take *responsibility* in consequence of danger, then indeed we prostitute a high and holy office, fail to exercise it purely, and will have to give an account of it hereafter. The same German author eloquently observes: "Der wahre Arzt soll kein anderes Interesse haben, als Gesundheit und Leben seines Kranken. Jedes andere fuehrt ihm vom wahren Wege ab, und kann fuer den Kranken die nachtheiligsten Folgen haben. Er braucht nur in irgend einen Collisionsfall zu gerathen, wobey seine Reputation oder sein Beutel in Gefahr kommt, wenn er etwas zur Erhaltung des Kranken wagt, und er wird zuverlaessig lieber den Kranken sterben lassen, als seine Reputation verlieren."* (*Makrobiotik, von Dr. Hufeland.*)

ART. IV.—*Surgical Cases and Remarks.* By THOMAS WELLS, M. D.,
Columbia, S. C. (With two wood-cuts.)

CASE I.—*Chronic Empyema—Paracentesis—Cavity Injected—Cure.*
Dr. Wm. M'Queen, a highly respectable member of the medical profession of Cheraw, S. C., aged about 33, five feet ten inches in height, stoutly built, active constitution, and of nervoso-lymphatic temperament, placed himself under my care early in June, 1836, for emphysema of the left side, of long standing.

He gave me the following history of his case. He says, "I had a violent attack of pleurisy about the 20th of May, 1835, the intensity of which yielded in a few days to active treatment, but leaving me with constant pain in the left side, accompanied by considerable fever and a very frequent pulse,

* The honest physician should have no other interest than the health and life of his patient. Every other leads him from the true path, and may result in the most injurious consequences to the sick. Should a case of difficulty arise, in which, by hazarding any thing for his patient's preservation, he might endanger either his character or his purse, he would unflinchingly rather let him die than sacrifice his own reputation.

ranging from 110 to 140 beats in a minute; there was also very great difficulty of breathing, and an inability to rest for a moment except on the affected side. For these symptoms I remained under treatment four or five weeks, when the pain and fever subsided; my appetite returned, and I regained slowly some strength and flesh, but the difficulty of breathing continued, and I was a good deal harassed with palpitation of the heart. It was not, however, until some time in August, between two and three months after the first attack, that I discovered a fluctuation in the left cavity of the chest." "At that time there must have been a large quantity of matter collected; for, upon examination, the left side of the chest was found to be considerably enlarged, and there was an evident displacement of the heart." "My disease was supposed to be dropsy of the chest, and was treated accordingly; but gradually growing worse, and believing I had mistaken the nature of my case, I at length determined to consult you."*

On his arrival in Columbia his condition was most painful; he had more or less fever every night of a hectic character; suffered greatly from dyspnoea and palpitation of the heart, which were aggravated by an attempt to ascend a flight of stairs; the pulse was small and very rapid; the face bloated and the eye dull; the countenance expressive of great anxiety and distress; his appetite and digestion bad, bowels irregular; his sleep much disturbed and unrefreshing.

On examination of the thorax the heart was felt beating in the right side, at a point corresponding nearly with its normal situation in the left. There was no respiratory murmur to be heard on the left of the mediastinum. The left side of the thorax was found by admeasurement something more than one-third larger than the right; the intercostal spaces increased in width, and pressed outwards beyond the level of the ribs; the left shoulder considerably elevated; the liver, stomach, &c., pressed downwards, giving great prominence to the upper part of the abdomen.

Dr. McQueen was fully advised of his situation, and was satisfied that his only chance of recovery, or of prolonging his life, depended on the removal of the fluid from his chest by an operation; this being agreed upon, he took some doses of alterative aperient medicine, confined himself to a bland diet, and observed a state of quietude in his chamber, until the morning of the 7th of June, when the operation was performed in the following manner. A broad bandage was passed around the chest, ready to afford a regular degree of pressure as the fluid should be discharged; he lay upon the edge of the bed, upon his back, a little inclining to the right side, with his head and shoulders somewhat elevated; an incision was made, about an inch in length, with a double-edged scalpel, through the integuments upon the upper edge of the seventh rib, and a little nearer to its spinal than its sternal extremity; the scalpel was then thrust into the cavity of the chest in the middle of this incision; a gum elastic bougie, of good size, with a large eye, was introduced through the puncture, and between two and three quarts of thin, inodorous pus drawn off; at first he expressed himself much relieved from the discharge, his breathing became freer, and he felt less oppression; but after the above-mentioned quantity of matter had been discharged, he began to complain of faintness, and the instrument was withdrawn. A piece of adhesive plaster was placed over the incision. The bandage was made moderately tight about the chest and left on; all unpleasant effects from this

* This history was given me in a letter by Dr. McQueen some time after his return home.

operation soon passed off. In the afternoon of the same day the same instrument was again introduced, the point turned backward towards the posterior walls of the thorax; and intending now to draw off the whole of the fluid, if this could be borne, care was taken to exclude the air from the thoracic cavity; the skin was pressed about the instrument by the fingers of an assistant; the end was held between the thumb and middle finger, with the forefinger ready to close the orifice as soon as a full stream ceased to flow. He however began to complain of increasing embarrassment in his breathing, after about two quarts had been discharged, before any change took place in the stream of matter, and the process was again suspended. For a short time after this operation he perspired freely; complained of great oppression and difficulty in making a *satisfactory* inspiration, and of faintness. These symptoms were, however, soon removed by *tightening* the bandage around the chest; a few spoonful of wine and some light nourishment, and at evening an anodyne draught.

June 8th. He has had a decidedly better night than for a long time; feels this morning in better spirits. In the middle of the day the tube was again introduced, with the same precautions, and the fluid allowed to flow until the stream was interrupted. About two quarts were drawn off at this time, making in all between six and eight quarts, and there must still have been a considerable quantity remaining in the thoracic cavity, which the contraction of that cavity was not sufficient to force through the tube. He experienced comparatively little inconvenience from this operation; the day was passed with but slight constitutional disturbance. His bowels were opened, and an anodyne ordered at night. The bandage was kept firmly applied about the chest.

9th. Had some febrile excitement last night; did not sleep so well as the night before, and complains this morning of a sense of fulness in the left side; a full quart of matter was drawn off to-day, which relieved him from the sense of oppression complained of in the morning. Ordered blue mass. and ext. cicuta $\bar{a}\bar{a}$ gr. v., and an aperient dose for the morning.

10th, P. M. Bowels have been moderately moved, and he feels much relieved, but complains again of the sense of fulness, no doubt, as he thinks, from the accumulation of fluid in the pleural sac. On attempting to introduce the tube to-day, it was found that the parts had adhered to such an extent as to render it impracticable; had to make a new incision; about the same quantity of matter was drawn off as yesterday. Just as the fluid ceased to flow to-day he made a sudden and full inspiration, and a quantity of air passed into the cavity; a small quantity may have passed in yesterday. It now appearing that this operation would have to be repeated daily for some time, a tent was introduced into the orifice to keep it open, and to avoid all future cutting, a thing much dreaded by the patient.

11th. Has considerable febrile excitement this morning, and complains of soreness about the chest; pulse accelerated, and breathing rather more embarrassed. Drew off about a quart of intolerably fetid matter, of a darker colour than before. Fractional doses of tart. antim. and tinc. opii; fomentations to the chest.

12th. Less fever; same quantity and quality of discharge; same treatment.

13th. Febrile excitement last night moderate; discharge not diminished in quantity; fetor the same; his strength has sensibly decreased within the last three days; complains of languor and general malaise. It was now evident that something must be done to lessen the quantity of this morbid secretion, and to correct its quality, or our patient would, at no distant

period, sink from exhaustion and irritation. After the matter was discharged, about a quarter of a pint of a weak solution of chloride of soda was injected through the same tube, and suffered to remain about ten minutes, and then to pass out again, without any effort to withdraw the whole.

14th. He not only did not experience any inconvenience from the solution injected into the pleural sac, but is essentially relieved by it; the irritation and fever much less this morning; about the same quantity of fluid withdrawn, but less fetid; a larger quantity of the solution of the chloride of soda was injected, and after some minutes suffered to flow back again, as on yesterday. It is unnecessary farther to detail the daily treatment in this case. It was found impracticable to prevent more or less air passing into the chest, at each operation, and as little or no inconvenience resulted from it, under the counteracting influence of the injection, it was no longer regarded. The free extremity of the elastic tube was bent downwards below the level of that within the cavity, giving to the instrument the properties of a syphon, and the whole of the secreted fluid daily evacuated, and the solution of chloride of soda injected, gradually increasing its strength and its *quantity*, until it corresponded with the *quantity of matter* drawn off at each operation. From this time to the 20th of July, when he left Columbia, the same course was followed up. The discharge soon lost its fetor, and gradually decreased in quantity from the time we commenced the use of the injection, so that on his departure it amounted to about three gills in the twenty-four hours.

During this period, a little over a month, his recovery was uninterrupted by any untoward symptoms; the state of his digestive organs was carefully watched, under the influence of an alterative, tonic course; and as his appetite and powers of digestion improved, he was allowed a more liberal diet. For the last ten days he remained here he was able to take a short walk daily, and with much more ease to himself than when he came; the prominence of the left side of the thorax, and upper part of the abdomen had subsided; the heart had made some progress towards the left; but no respiratory murmur was yet perceptible on that side. His appetite was good; sleep much improved; and when he left me for Cheraw he felt full confidence of a speedy recovery. He was advised to continue the same course of treatment until his health should be restored.

March 7th, 1837. Dr. M'Queen wrote me that he had passed the month of August, after leaving Columbia, at a mineral spring in North Carolina, where he derived considerable benefit from the change of air, and the tonic, diuretic properties of the water, and farther says,—“Since my return home I have been slowly, but constantly improving, and at this time I think my general health is as good as it has been for several years. I am as fleshy as I ever was—have no cough, no pain—and am able to ride on horseback to any distance which I have attempted, without fatigue. I have rode as far as twenty miles in a day; my breathing is greatly improved, but the discharge still continues; the quantity is small, about a gill every twenty-four hours; yet there has been no sensible diminution for the last six or eight weeks. The fluid discharged now is, in appearance, very much like what you drew off at first; it is without smell, thin and unirritating; the chest on that side has fallen in considerably, but is, I think, beginning to expand again. For some time past I have discontinued the use of the injection, and indeed of every other remedy; but the discharge keeps up so obstinately that I am beginning to feel uneasy. Will you add to my debt of obligations by informing me what course you would advise to be pursued?”

In answer to this letter I suggested to him to try a weak solution of corrosive sublimate, as an injection into the small cavity still remaining, and that failing, to try a weak solution of the nitrate of silver.

On the 25th of May, 1837, Dr. M^cQueen wrote to me again, that he had just recovered from a short attack of fever; that during the fever, the discharge from his side had considerably increased, and become excessively offensive and very irritating. "But I am now," he says, "much better, and the discharge has almost ceased; this morning there was only about two table-spoonsful, and it has more the appearance of serum than matter."

In answer to some inquiries which I recently made concerning his present state of health, Dr. M^cQueen writes me, March 20th, 1844, that the opening in his side, and the discharge, *continue very nearly the same* as when he wrote in May, 1837. That the left side of the chest is very much contracted, and that the ribs on that side are depressed, and he thinks the right side is very considerably *expanded*. This opinion is also expressed by a very intelligent medical gentleman who examined him. "The difference in the two sides, measuring round the chest from the sternum to the spine, is about four inches. This distortion of the chest has caused so much inclination of the body to the left, as to make the point of the left shoulder something more than two inches lower than the point of the right." There is a slight curvature of the spine. The heart occupies nearly its natural position in the chest. "The respiratory murmur is not heard in the left side; the air never enters it. My general health is very good, and I think I may safely say it was never better. I take a great deal of exercise without inconvenience; am engaged in planting, and attend to my own business without the assistance of an overseer."

Remarks.—In paracentesis—an operation which I have performed a great many times—I have invariably used a lancet, or a lancet-shaped scalpel, to make the opening into the hydropic cavity, whether of the thorax, the abdomen, or the tunica vaginalis; and a catheter with a large eye, either metallic or gum-elastic, as the tube through which to draw off the fluid, in preference to the unsurgical and awkward trocar and canula; and it seems to me that the former have the advantage over the latter, in being more accurately used by the surgeon,—less painful, as well as less frightful to the patient, and certainly, attended with less risk of injury to the contained viscera.

In paracentesis thoracis, for chronic empyema, where the operation has to be often repeated, the blunt, elastic tube has other advantages over the trocar and canula—it is more readily reintroduced through the puncture—the end of the tube introduced may be directed to any part of the cavity without danger; and by giving the free extremity a proper curve, as in the above case, all the fluid, or nearly all, may be drawn off at any time when that is desirable.

On the contrary, where a simple puncture is made with a trocar, it is difficult to keep the orifice open for any considerable length of time, even by the introduction of a tent; and few patients would submit to have the trocar *daily* plunged into the chest for some months, while the cure is being effected. But should one succeed, in this way, in establishing a permanent fistulous

opening in the side, a fungous excrescence is liable to spring up around the orifice, attended with morbid irritability and inconvenience.

Great stress has been laid, by most writers on paracentesis thoracis, on the importance of excluding atmospheric air from the thoracic cavity in this operation—first, on the ground that the air is an excitant, not adapted to the vital properties of serous surfaces; secondly, that the air would fill the space occupied by the fluid drawn off, and thereby prevent the lung, more or less collapsed, from re-expanding, and for this reason, the pressure which has been applied to the chest during the operation, is directed *to be removed as soon as the fluid ceases to flow, and the tube is withdrawn*. This is correct reasoning, no doubt, in recent cases of thoracic effusion, where the pleura has undergone no considerable organic changes, and retains its normal character of a serous membrane, and while the lung is still susceptible of ready re-expansion. But in *true empyema*, like the case of Dr. McQueen, the matter is entirely changed. In that case I had a large chronic abscess to deal with. The pleura had suffered a deep structural lesion—had lost its character of a serous membrane; secreting a bland serous fluid, and had become a granulated surface; probably in its whole extent, secreting pus.

The lung had also undergone irreparable organic changes—had become atrophied; and its cells nearly, if not entirely obliterated.

Nothing more then, than a *very partial* expansion of the lung could have been hoped for in this case.

The indication in chronic empyema, it seems to me, is the same as that in other large chronic abscesses—to get rid of the effused fluid, and to close the cavity as soon as this can be done without serious functional disturbance of the organs of circulation and respiration. A perfect cure is to be effected only by an entire obliteration of the pleural sac, by bringing about adhesion between the different folds of the pleura. The matter can be drawn off at first, to the extent only of the contraction of the thoracic cavity; and to *that extent* I think it may be evacuated at once without danger. The contraction of the cavity is to be effected, mainly, from the *costal side*, by pressure, restoring the walls of the chest, which have been more or less pressed outwards, to their natural state,—*from below*, by the action of the abdominal muscles, forcing up the depressed viscera and restoring the concavity of the diaphragm; and from the pulmonary side, by the expansion of the lungs. Now what would be the result of abstracting a considerable quantity of matter from the chest, by pressure upon the diseased side, and as soon as the opening into the cavity should be closed, removing that pressure? The elasticity of the ribs, &c. would, of course, restore them to the state in which they were before the operation, and unless the space occupied by the matter withdrawn, should be filled from below by the elevation of the diaphragm, it must be supplied from the opposite side by the *increased* expansion of the lungs. But in true empyema, when the tissue of the lung in the diseased side has undergone changes incompatible with re-expansion—and this, I

apprehend, would be found to be the state of things in most cases of empyema, where an operation is called for—then this tendency to a vacuum would be counteracted by the increased and permanent dilatation of the sound lung. This, of course, could be endured only to a very limited extent, without endangering life from suffocation—the ability to make an expiration sufficient to renew the air in the lung would be lost. This was the condition of my patient after the second operation, when the pressure was removed from the chest for a few seconds—and should always be guarded against by keeping up such a degree of pressure, as shall secure the proper action of the sound lung. It is true, that all means should be used to restore the function of the collapsed lung—so far as this may be practicable—and the most ready way of doing this, would be the production of a partial vacuum on that side; and the extent to which this may be carried should be measured by the degree of embarrassment in the function of the sound lung, which may be borne without danger.

Is the admission of pure atmospheric air to the cavity of a chronic abscess, directly injurious? I suppose the experience of most surgeons of the present day, would not only answer this question in the negative, but say that the free admission of pure air, in such cases, is *decidedly beneficial*. In the treatment of a chronic abscess, where the contents are *morbid*, attended with great constitutional irritation, every surgeon knows how soon this state of the system is changed for the better, by freely laying open the cavity—where this is practicable—and giving free access to the *air and light*. The walls of the abscess on being exposed, are found coated with a thick, dirty, tenacious secretion, which can scarcely be removed by washing with a sponge and water—the effused lymph is but imperfectly organized—and the granulations, so far as they are formed, are pale and flabby—a *peculiarly morbid condition* of the secreting surface, incompatible with the secretion of healthy pus, and deeply implicating the sympathies of the system. In a very few days after free incision, by simple water dressings, or the application of some of the chlorides and lint, the cavity is cleansed, the granulations become healthy and secrete pure pus, and the constitutional irritation disappears. This alleviation of the constitutional disturbance, could be effected only by bringing the secreting surface of the abscess into a healthy condition; and this, in many cases, could not be brought about by any treatment, local or general, short of free incision and exposure of the entire cavity: on the contrary, the constitutional irritation is not unfrequently aggravated, to a dangerous degree, by simple puncture and partial or complete evacuation of the abscess.* The hectic and its concomitants, supervening upon the discharge of the matter in such cases, have been *wrongfully* attributed to the admission of air to the cavity of the abscess, even where the walls of the abscess necessarily collapse as the matter is discharged, and when not a particle of air

* See the next case.

could gain access to the cavity. This aggravation of the constitutional symptoms may, I think, be accounted for without resorting to this *air-hypothesis*. In cases complicated by irremedial organic lesions, as in psoas abscess, originating in caries of the spinal vertebræ, where the medulla spinalis has begun to suffer, the constitution is already worn down, the remedial powers of nature are exhausted, and the least shock given to the system, from whatever cause, is most sensibly felt, and may hasten on a fatal termination. These cases are among the *incurables*, and may be dismissed.

It seems to be a law of granulating surfaces, when brought into contact, if in a *healthy* state, to adhere and close the breach; but when in a *morbid* condition, if brought into near proximity, the *vital action* of the part is still *farther disturbed*, and consequently the secretions become more and more vitiated, implicating the constitutional sympathies to an extent, compared with the local affection, not always easily accounted for; and to this law of our organism should mainly be attributed, I conceive, the evils which sometimes follow the opening of large abscesses, and not to the admission of air to their cavities. At all events, the constitutional disturbance is relieved by a course of treatment, which restores healthy action to these secreting surfaces; let it be by free incision, by stimulating injections, often repeated, filling the cavity, and suffering the injected fluid to remain from one time to another—or by filling the cavity with lint, wet with some detergent liquid, and thus protecting these surfaces against their own *vitiated secretions*, and *preventing* them from coming in *contact* with each other. I have frequently succeeded in treating chronic inguinal and pelvic abscesses, unaccompanied with lesion of the osseous tissue, in this way; and it is still to be shown that, distending such cavities, after cleansing them by proper injections, *with atmospheric air, to be renewed at intervals sufficiently limited to guard against deleterious changes in the air*, would not be sound practice in abscesses involving parts not admitting of incision.

The admission of air, then, to large cavities secreting pus, is to be dreaded only from the pernicious changes it induces in the contents of such cavities; and, I apprehend, the resources of surgery will be found amply sufficient to guard against these.

The chlorides, especially that of soda, seem to possess the property of counteracting the unfavourable influence of the air upon purulent secretions, while at the same time they improve the condition of the secreting surface; and no doubt, solutions of iodine will be found efficient in the latter particular—always, of course, relying very much upon constitutional treatment in cases of the kind.

One word farther in reference to the operation for chronic empyema—I would advise, after deciding upon the place where the puncture should be made, to commence by an incision, an inch and a half in length, through the integuments, close upon the upper edge of the rib selected, and then to thrust the scalpel at once, through the muscles and pleura. There can be no good

reason for dissecting down to the pleura, before puncturing that membrane, as recommended in a late and excellent work on surgery. An ample incision through the integuments at first, will enable the surgeon, by dressing with cerate and a tent, to obviate the necessity of repeating the puncture. The elastic tube may be easily introduced through the puncture—firm and steady pressure should be made upon the affected side by a bandage around the chest, and the matter allowed to flow until some embarrassment in the respiration and circulation is experienced. The operation should then be suspended, until the system accommodates itself to this change in the contents of the thoracic cavity, aided by the continued pressure of the bandage. In twelve or twenty-four hours, the operation may be repeated, and so on, until all the fluid shall have been withdrawn. When the quantity of matter is large, the disturbance of the functions of the thoracic viscera, from its discharge, will of course be very considerable at first, and should not be increased by any avoidable impression. It would, therefore, be best to prevent, as far as practicable, the admission of air to the pleural sac, for the first four days, until the walls of the thorax are brought back to their normal state, and the heart and lungs accommodate themselves to this new state of things, so far as to admit of the abstraction of the whole of the fluid. After that, when it comes to the daily discharge of the daily secretion, no evil need be apprehended from the admission of air; indeed, this will be found unavoidable. At this period, I would commence injecting, and even *earlier*, should air have accidentally gained admission to the pleural sac, which will be known by the fetid smell of the sulphuretted hydrogen gas generated.

These were my views of the pathology and treatment of chronic empyema, at the time of treating the above case, nor have I, on more mature reflection and experience, had reason to change them. I am happy to find them nearly in accordance with those of the eminent Parisian surgeon, M. Velpeau, as laid down in his *Médecine Opératoire*, a work, which I did not see until some time afterwards. The treatment of empyema, by detergent injections, is also recommended in certain cases, in an able article by Dr. Williams, in *Tweedie's Library of Practical Medicine*, published in Philadelphia in 1841.

CASE II.—*Injury of the thigh—Rupture of the Gracilis muscle—extensive effusion—Treated, in a chronic state, by incision—Cure.*—I was called, Aug. 4th, 1826, to see Henry, a black man, of robust constitution, aged about 30 years, belonging to J. T. Wade Esq., residing in the country, about five miles from Columbia, who had, while engaged in felling trees, been accidentally caught under a falling tree, and badly injured.

The superior maxillary bones were fractured in three places; the inferior, in two places; the front teeth, together with the corresponding alveolar processes, were detached from the lower jaw; the soft parts of the face cut, and shockingly lacerated; his right thigh was bruised and swollen, but the skin not broken. On my arrival, a few hours after the accident, he was still suffering from concussion of the brain, and the general shock given to his sys-

tem. The wounds of the soft parts of the face were dressed with sutures and adhesive straps—the fractures adjusted, and the bones kept in place, by ligatures passed around the teeth in the different fragments, and firmly tied,—by a pasteboard splint, softened and moulded to the shape of the lower jaw, and a bandage applied, so as to keep the corresponding teeth in the upper and lower jaw, in contact.

The injury of the head claimed our whole attention, and little was thought of the injury of the thigh, of which he scarcely complained.

The next day he had recovered from the shock, was able to walk about, and nothing seemed to be required, but time, to allow the bones to unite. There was no difficulty in insuring an antiphlogistic regimen, as nothing could be gotten into his mouth, except fluids, through the opening left by the loss of his front teeth.

Every thing went on favourably until the 20th of August, when he was brought into town, complaining principally of his thigh, which was very much swollen, and had become inflamed and painful within the last few days. On examination it was evident that there was a large quantity of fluid collected in the thigh, under the fascia, extending from the knee to the groin. I made a puncture with a broad lancet on the inside of the thigh, an inch above the condyle, and drew off between three and four pints of serous fluid slightly tinged with blood, which gave him immediate relief from the pain. This fluid, on standing a short time, coagulated into a thin *jelly*. A roller bandage was applied to the thigh as tightly as it could be borne without pain, in hopes the cavity might be closed by adhesion.

22d. He began to suffer severe pain again in the thigh, from the accumulation of fluid, and it was found necessary to use the lancet again for its discharge. About two pints were drawn off similar to the first discharge. The cavity was injected with a stimulating fluid, a tent introduced into the puncture; the bandage reapplied, and alterative medicine administered internally.

This treatment was continued for the succeeding fifteen days, varying the injection repeatedly, in hopes to bring about adhesive inflammation in the cavity. The discharge soon became *sero-purulent*, from six to eight ounces a day, and a most violent hectic fever was lighted up in his system, the nightly paroxysm terminating in a profuse sweat. The constitutional disturbance increased daily, until he had an utter loathing of every thing in the form of nourishment; frequent turns of nausea, and efforts to vomit; the pulse became very quick and small; was exceedingly restless; got no sleep, except when under the influence of a strong anodyne; there was a rapid emaciation; his eyes were sunken, and his features disturbed.

This was his condition on the 7th of September, a state of constitutional irritation greater than I have since met with in any case, and when it appeared he could not live much longer without some change in his case, I introduced a bistoury through the puncture into the cavity, and made an incision between eight and ten inches in length, on the inside of the thigh, in the course of the *gracilis* muscle. There was no appearance of living tissue in this exposed cavity—the whole surface was of a dirty, ashy colour. It was found that the *gracilis* muscle had been ruptured at its inferior extremity, and, that the lower half of the muscle was in a state of decomposition, nothing remaining of it, but shreds of cellular membrane; the cellular tissue throughout the cavity, was in a state of disorganization.

The cavity was filled with lint wet with port-wine, and a light bandage passed around the thigh. The same constitutional treatment was continued.

From this moment his symptoms began to improve; in the course of three days the coating of the entire cavity was thrown off, and the surface assumed a healthful granulating appearance; his sleep was restored; the bark and wine, with which he had been liberally supplied, now acted as a cordial; his appetite returned, and the hectic paroxysms gradually disappeared. This convalescence was uninterrupted; in the course of four weeks, the wound in the thigh had nearly cicatrized, and he was walking about.

Henry's recovery was complete, and he continued to enjoy the perfect use of his leg for ten years thereafter, but since that period, say for the last six or seven years, this leg has gradually failed him, when exposed to hard labour, and is subject to attacks of œdematous swelling, two or three times in the course of the year. I examined his thigh a few days ago, for the first time since fifteen years. The cicatrix, resulting from the incision on the inside of the thigh, has contracted longitudinally, to about one-half its original length, and in its middle, seems attached to the deep-seated parts, leaving a considerable fissure in that part of the thigh; he is otherwise in good health.

Remarks.—This was an extreme case of constitutional irritation, supervening upon the opening and discharge of the contents of a large cavity, differing in no essential particular, as I conceive, from ordinary chronic abscess. The treatment, local and general, seems to have been such as was sanctioned by surgical writers of that day; the cavity was injected with solutions of the sulphate of zinc, sulphate of copper and the oxy-mur. hydrarg.; calomel, opium, bitter, alkaline, aperient infusions, bark and wine, &c., were freely administered internally, with a view of allaying irritation and restoring a healthy state of the secretions. Notwithstanding, from an error in judgment, in continuing my efforts to close the cavity by this treatment so long before resorting to the only proper means in the case, my patient came very near losing his life—a sin in practice, of which I have not since had cause to repent.

CASE III.—Extensive Disease of the Tibia—Removal of nearly one-third of the Shaft of that bone—the bone reproduced and limb preserved. Henry Lee, a free, light mulatto man, aged 38 years, five feet ten inches in height, well made, of sound constitution, a carpenter by trade, industrious, and of good habits, was attacked with bilious remittent fever on the 2d or 3d of November, 1840. For the first week he attempted to treat himself, and took several doses of cathartic medicine. When I first saw him, on the fifth or sixth day of the attack, he was dangerously ill; his vital forces were much exhausted; his skin deeply tinged with bile, as was more especially seen by the deep yellow colour of his eyes and mucous membrane of his mouth; only partial remission of the fever; the brain oppressed, with a tendency to coma; pulse quick and weak; tongue thickly covered with a dark coat in the centre, dry and shining at its edges. He lay almost altogether upon his back, limbs extended, and took little notice of any thing about him.

For a week after he came under my care his recovery was considered very doubtful; after that the symptoms gradually improved until the 25th of November, when he was considered fairly convalescent, and I discontinued my visits.

On the 12th of December following I was called to see him again, and

found him in the following condition. He was suffering great constitutional irritation, with hectic exacerbations at night; the right foot and leg immoderately swollen and œdematous; the skin and cellular tissue, on the inner side of the leg, were entirely destroyed for six inches, from a point about three inches above the ankle-joint upwards, and involving about one-third of its circumference, from a line three-fourths of an inch external to the crest of the tibia, leaving the *inner surface* of that bone *bare* and *black* to the full extent of the ulcer, longitudinally; the muscles were partially detached from its anterior and inner edges. There were some excavations upon the surface of the bone, which had the appearance of having been caused by ulceration, or the application of some corroding agent.

On inquiry I found that Lee had received a slight injury on the shin some days before he was taken down with the fever, but the breach in the skin was soon healed, and he thought no more of it. On the 5th of December, however, ten days after I had discontinued my visits, inflammation supervened at the point where he had received the injury, which soon ran into ulceration, and the surrounding skin became dark-coloured. An officious friend calling to see Lee, persuaded him to apply, as an infallible remedy for "sore shins," "Cheeseman's Arabian Balsam." This application was followed, in the course of *two days*, by sloughing of the soft parts to the extent above mentioned, leaving the tibia exposed. What was the active ingredient in this Cheeseman's Balsam I know not, as I was not able to procure any of the article for examination, nor am I able to say with certainty whether that was the cause of this rapid and extensive destruction of the parts: or this, the result of *inflammation* and *gangrene*, under a disturbed state of the system, although I am inclined to attribute some part of the mischief to that application.

The process of separation, between the *dead bone* at each extremity and that still covered with integuments, had already made considerable progress, especially at the lower end, so that I had no doubt the entire shaft of the tibia was deprived of vitality.

The question now to be decided, was between immediate amputation and an attempt to save the limb, in the hope that nature, in her abundant resources, might, in some way, fill up this extensive breach in the tibia, either by ossific deposits, or some substitute which would give *firmness* to the leg, without which it would be worse than useless. My decision was in favour of the latter course, on the ground that the periosteum, on the under surface of the bone, might remain intact, and that ossific deposit might take place in the granulations, which would necessarily shoot up from this membrane, and the tibia thus become again united. In coming to this decision I was aided by general principles alone—I knew of no precedent: nor am I now aware of any parallel case having been recorded.

The ulcerated surface was covered with a fold of lint saturated with a solution of the chloride of soda; over this a roller bandage from the toes to the knee; a separate strip over the diseased surface for the convenience of dressing; a hollow splint was carefully adjusted to the outside of the foot and leg, and the leg kept constantly in a horizontal position. Lee was put upon an alterative, tonic course of treatment. At first he took a pill composed of blue mass and ext. cicuta, āā gr. ii, à iii, every night, and three or four times through the day, a small glassful of a decoction of gentian, orange peel, rhei, and sup. carb. soda, sufficient to procure a regular motion of the bowels daily; an anodyne draught at night to procure sleep, and was allowed a simple but nutritious diet. In a few days his condition was much im-

proved; his appetite became good, and his sleep natural. From that time his recovery was constantly progressive. This course of treatment was followed up, with more or less regularity, for four or five months, occasionally substituting for the bitter decoction quinine, porter, wine and other tonics. Indeed, he has been obliged to resort to this alterative course occasionally, for a few weeks at a time, up to the present moment, whenever his digestive apparatus failed in its healthful action.

On the 19th or 20th of December, one week after I was called to see Lee, a complete division of the tibia below had taken place, and the foot, still much swollen, when unsupported, would fall backwards or outwards, almost as much as in complete fracture of the leg at this point, so great was the destruction of the tissues of the leg, and so little was the support afforded by the fibula. Great care was required, at all subsequent changes of the dressings, in steadying the foot. Early in January it was clear that separation had taken place also at the upper extremity of the dead bone, but it was not thought advisable to attempt its removal, or in any way to disturb it, for fear of interrupting the process going on beneath, until the middle of February, when this section of the tibia was quite loose, and easily detached from its connections with the granulations, which had penetrated into the innumerable small openings made by absorption, in its extremities and under surface, giving it the appearance of having been worm-eaten. The discharge of blood from the lacerated granulations was copious for a few moments, but this was very soon arrested by the application of cold water. The length of bone removed had been very considerably reduced by absorption. At this time cicatrization of the soft parts had reached very near to the edges of the tibia on either side. The division in the tibia was not transverse, but oblique from its centre, so that there may have been near an inch of some laminæ of the posterior surface remaining, both above and below.

From this time on, the local treatment was directed to the support of a healthy state of the granulations in this cavity, which went on slowly, but progressively filling up.

On the 7th of April it was found that ossification had made considerable progress, sufficient to give steadiness to the foot in rotating the limb; and Lee, still wearing the same dressings, was allowed, for the first time, to mount his crutches and take a little exercise about his room. In a few weeks after he was able to go into his garden; and on the 4th of July following he could bear his weight upon the leg. From this time he rapidly regained his flesh and strength, and about the 1st of October, ten months from the necrosis of the tibia, he began to do something at his trade again, but did not regain the full use of the limb until July, 1842. Since this last date he has been regularly at hard work, and has enjoyed good health. For three months during the last summer he was engaged in building a bridge, in the river swamp below Columbia, where he had to labour, a great part of the time, in mud and water up to his waist. For the last eighteen months, during which time Lee has called on me only once in two or three months, cicatrization of the remaining ulcer has advanced very slowly, and apparently in a corresponding ratio with the filling up of the cavity left by the removal of the necrosed bone.

I have, within a few days, made a careful examination of Lee's leg. There still remains an ulcerated surface, three and a half inches long, and in the centre something more than an inch broad, gradually contracting from this point upwards and downwards. The granulations appear healthy, and secrete a very moderate quantity of pus. The new bone formed is about

half the original thickness of the tibia, and something broader; a little more elevated at its margins, which are covered with new skin, than in the middle. On introducing an acupuncture needle at different points of this ulcer the bone is found to be exceedingly hard, not admitting the point of the needle to penetrate it at all. There are distinctly felt by the needle minute spiculæ of bone shooting up into the granulations from the solid bone below.

The extremity of the superior portion of the tibia next the ulcer is very considerably enlarged, and has been extended downwards, by ossific deposit, an inch or an inch and a half; the superior extremity of the *lower portion* is much less enlarged, and has increased upwards not more than half an inch. The depression or cavity remaining is about half an inch below the level of the original bone, but when a line is drawn from the enlarged extremities of the bone above and below, it shows a depression in the centre of three-fourths of an inch or more. The filling up of this cavity with ossific deposit has gone on pretty regularly, rather faster in the *central portion*, if any thing, than at either extremity, so that the cavity now approaches nearer a plane than at first. The process of ossification is evidently *still going on*, and I am inclined to believe that the original thickness of the bone will be nearly, if not quite, attained.

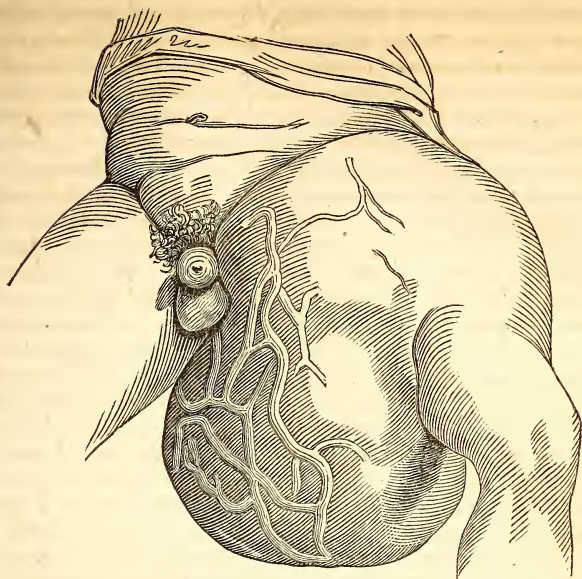
A great many changes have been made in the local applications to this ulcer, to preserve a healthy state of its granulations, principally selected from the mineral solutions and chlorides; the one, however, which seems to have retained its character the longest, is an ioduretted mercurial unguent, according to the following recipe:—R. Iodine, gr. xv; hydriod. potass., ℥ii; ungt. mercurial., ungt. resinos., āā ℥ss.—M. ft. ungt.

I may have attached too much importance to this case, and been unnecessarily minute in describing it; but, if I am not mistaken, it is calculated to throw *some light* upon the process of reproduction of bone—a subject by no means exhausted, and may encourage the young surgeon to persevere in his efforts to preserve his patient from mutilation in similar cases.

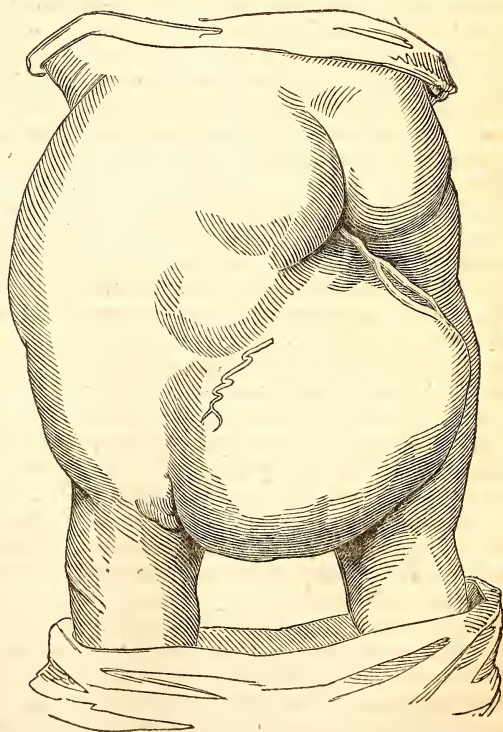
The specimen of bone removed in the above case is in the possession of my friend, Dr. W. Parker, the able professor of surgery in the College of Physicians and Surgeons in the city of New York.

CASE IV.—*An enormous encysted Tumour developed in the upper part of the Thigh. Treated by incision, discutient applications, bandage, &c.—Cure.* Mr. E. Hartzoge, of Lincolton, N. C., aged 25 years, of low stature, but thick set and stoutly built, came to Columbia for professional aid, Feb. 15th, 1842, on account of an enormous tumour, attached to the upper and inner part of the left thigh.

The tumour approaches nearly to a globular form, commencing near the superior anterior spinous process of the ilium, extending inwards in the course of Poupart's ligament, to the pubis, thence backwards to a point a little below the tuber ischii; and when he stands erect, hangs down some inches below his knees. The following are the dimensions of the tumour when in the standing position. A line passed vertically around it, from its upper attachment in front, a little above Poupart's ligament, to its upper posterior attachment, an inch below the tuber ischii, measures three feet and five inches: a line passed in like manner horizontally over its greatest diameter, from its anterior to its posterior attachment to the thigh, three feet and four inches, giving a mean circumference of about four feet. The pendulous part of the tumour when he is sitting upon a common chair, the leg being flexed to a right angle with the thigh, reaches nearly to the ground, and is



three feet and one inch in circumference. In this position its attachments involve the two upper thirds of the thigh, but when in the standing position, the skin is drawn from the thigh over the tumour to within two inches of the knee. To the touch the tumour is firm and elastic, its surface is regular and smooth, except that it is traversed in several places, by enlarged, tortuous varicose veins. The veins over the pubis and across to the ilium, are also greatly enlarged and varicose. The sartorius and gracilis muscles are distinctly felt passing over the inner surface of the tumour; and there may be other muscles involved in its walls, but if so they cannot be distinctly traced.



When standing, his knees are widely separated and bowed outwards, and his feet about eighteen inches apart. He walks with difficulty; his countenance indicates much constitutional disturbance and anxiety; and although only twenty-six years old, he might be taken for forty-five or fifty. He is very much emaciated; pulse quick and weak; appetite and digestion bad; bowels disposed alternately to diarrhœa and constipation.

Mr. H. gave us the following history of his case. He says, "up to my eighteenth year I enjoyed remarkably good health, was stout and athletic; weighed at that age 155 lbs. About that time I was attacked, after a very hard day's labour in the harvest, with violent pains in my legs; supposed by my physician to be rheumatic; was confined to my bed for a week. I then got better; the pain left my right leg and settled in my left thigh. In about three weeks after this, a large abscess formed in the upper part of the thigh and groin; this was opened, and a large quantity of matter discharged at the time; there was more or less discharge from this opening for three months afterwards, when it healed; but the parts continued ever after sore to the touch. No bone was discharged from the abscess. Soon after this abscess closed, two others were formed, one on the back part of the right shoulder, the other over the anterior extremity of the second rib of the same side, from both of which, ten or twelve weeks after they were first opened, small pieces of bone were discharged. These attacks confined me to my house for twelve months; and for two years after that I was obliged to walk on crutches; my general health, in the mean time, gradually improving. I then went to the shoemaker's trade, and very soon thereafter, discovered a swelling at the upper and inner part of the thigh, which has gone on increasing regularly from that time to this—nearly six years—the result is what you see. I suffered little or no pain from this swelling, until within the last eighteen months; since that time I have experienced great difficulty from the weight of the tumour, in taking exercise, either in walking or riding; and when I have attempted it, have felt great fatigue and pain. My health has been constantly declining, and unless I can get relief, I cannot stand it much longer."

Hartzoge was put upon an alterative, tonic course of treatment, consisting of some grains of blue mass and ext. cicuta at night, and a small glassful of a bitter, alkaline, aperient infusion several times through the day, sufficient to procure a regular motion of the bowels daily, and confined to a very simple diet. This course was continued between two and three weeks, until the abdominal secretions were brought into a more healthy state, before any local treatment was attempted; being in doubt in the mean time, whether any surgical procedure were admissible in the case.

On the 3d of March, an exploring needle was introduced into the inner face of the tumour, to the depth of two or three inches, and some drops of a viscid fluid made their appearance. The character of the tumour was thus revealed to us, and it was thought advisable to try the effect of drawing off the fluid contents. A large trocar was accordingly thrust through its walls near the point where the exploring needle had been introduced, and between three and four gallons of a thick albuminous fluid drawn off; a broad bandage was applied around the thigh and the immense mass which remained, so as to afford some degree of pressure, and the result awaited. Little or no constitutional disturbance or inconvenience followed this operation, except for the first few days; he found it difficult to stand or make a step upon the floor, when he got out of bed, having "lost his ballast." It was soon discovered, however, that nothing was to be gained by this process. The cavity in the

tumour filled up again rapidly, so that in ten days it had attained its original size, and he felt his strength considerably reduced.

March 13th. It was now determined to make an attempt to relieve our patient of his monstrous incumbrance, although at the risk of serious consequences. A free incision was made through the walls of the tumour, upon its inner face, and about two gallons of fluid discharged, similar to that first drawn off, only rather more viscid. The hand was then introduced into the cavity, and a considerable quantity of a jelly-like matter removed, together with two pieces of bone, one of which had the appearance of a detached portion of one of the trochanters, the other was a segment of a ring an inch broad, and was supposed to be an exfoliation from the femur. The remains of the tumour now lay spread out upon the bed, an enormous, flabby mass, from four to six inches in thickness; the walls of the tumour being of unequal thickness in different parts. To the feel, when the hand was introduced into the cavity, it was not unlike an imperfectly contracted uterus immediately after the expulsion of the child.

A bandage was applied, moderately tight, over the thigh and tumour; his bowels attended to; his diet very simple; and the symptoms carefully watched in anticipation of the inflammation, which was not slow in declaring itself. At first the discharge from the interior of the tumour was copious, but this gradually decreased, and on the third day had nearly ceased; a serous infiltration had taken place into the parietes of the tumour, attended with considerable swelling and œdema of the whole mass, and the integuments were involved in an erysipelatous inflammation. From this time to the 20th of March, the state of our patient was any thing but encouraging; the swelling continued to increase; the inflammation became more and more violent, and the constitutional disturbance alarming; the symptoms which supervened were not unlike those of a bad case of strangulated hernia. He complained greatly of the pain through the tumour, the thigh, and the lower part of the abdomen; had vomiting, hiccup, and spasms of the abdominal muscles and bowels; pulse rapid, and respiration somewhat embarrassed. At first, to moderate the external inflammation, cold water and other refrigerants were applied freely to the inflamed parts, but as the inflammation increased, we made use of a strong solution of the sulphate of iron, by means of folds of lint soaked in this solution, kept constantly applied to the entire external surface of the tumour, as advised by M. Velpeau in the treatment of erysipelas. This application had a most happy effect in moderating the external inflammation.

The constitutional symptoms were combated with calomel, morphine, and camphor—fomentations to the abdomen, &c., and were found amenable to that treatment. In the evening of the seventh day after the incision was made into the tumour, it had regained considerable rotundity; there had been no discharge from the cavity for three days, the incised parts having become agglutinated together; and when the state of our patient was at its worst, a blunt instrument was forced into the cavity, the wound reopened, and a quart or more of purulent matter discharged. This gave him immediate relief from the pain, of which he principally complained; he had some hours of sound sleep; the severity of all the symptoms gradually abated; the inflammation decreased, and the febrile excitement subsided. For the next eight or ten days, suppuration went on freely within the cavity; there was a copious, thin, purulent discharge, which kept every thing about him saturated; there were two or three points of sloughing through the walls of the tumour and the entire lining of its cavity, seemed to be thrown off in patches, some

of the size of the palm of the hand. The solution of the sulph. ferri was continued externally, and the cavity daily injected with a solution of the chloride of soda. On the first intermission in his fever, he commenced taking quinine and wine, and was allowed as free a diet as the state of his stomach would admit. For fifteen or twenty days previously, he had taken very little nourishment. About the first of April he was nearly clear of febrile excitement, the inflammation and soreness had left the tumour, the size of which had been very considerably reduced by suppuration; his appetite was moderately good.

From this time he took full doses of quinine and hydriodate of potass, alternately, a dose of each two or three times a day; the abdominal secretions were carefully attended to, and when restless and indisposed to sleep at night, which was frequently the case, a dose of morphine was given him. A little wine and a liberal diet were now allowed. The local treatment was now also changed; an ioduretted mercurial unguent was freely rubbed upon the entire surface of the tumour every morning, and the cavity injected, as before, and the whole subjected to the pressure of a well-adjusted bandage applied with as much firmness as could be borne without pain.

The process of absorption from the commencement of this treatment was astonishingly rapid; his strength and spirits, which had been miserably depressed, soon began to improve. After the 10th of April, he sat up a short time every day, and towards the last of the month could walk about his chamber. May 1st, he put on common pantaloons of a large size, and rode out in a carriage; this was afterwards daily followed up. During the latter part of his stay here, several considerable collections of matter formed in the atrophied walls of the tumour, and were laid open, but these were attended with very little pain or inconvenience.

On the 20th of May he was able to walk very well; his thigh with the bandage on, was about twice the size of the other; he was directed to follow up the same course of treatment for some months, until his thigh should be reduced to its natural state, and his general health restored; the next day he left Columbia for his home in North Carolina. Nothing occurred after he left here to interrupt convalescence; three months after his return home, he wrote me that his thigh was of the same size as the other, and he "was a well man again."

In July last, he wrote me again, that he still enjoyed excellent health, had *no trouble* with his leg, and had returned to his trade again. I have recently heard that he continued to enjoy excellent health, and had the full use of his left leg, in every respect as well as he ever had.

In the treatment of this case I was aided by Dr. S. Fair, my associate in practice, and the treatment was witnessed by four other members of the faculty of this city.

Remarks.—There seems to have been something out of the ordinary course of pathological changes, in the origin and progress of this case.

In the first attacks mentioned in the history of Hertzoge's sufferings, there was undoubtedly inflammation and necrosis of a portion of the upper extremity of the femur, followed by abscess; this, however, closed before the dead bone was thrown off, and when exfoliation did take place, instead of the detached portions of bone being discharged by ulceration, the common course in such cases, the vital properties of the surrounding tissues had be-

come so modified, that a sack was formed around these foreign bodies; this sack, to protect itself against irritation, became a secreting surface; and as the secretion increased and distended the sack thus formed, *this*, and the adjacent tissues took on the process of hypertrophy, and thus the secretion and hypertrophy went on *pari passu*.

In reference to the treatment of the case, it may be a question whether the course pursued was the best and safest for the patient or not? whether it would not have been better to have removed the whole mass at once with the knife? I thought otherwise.

Its removal would have given a severe shock to the system, already greatly deranged in every function; but had he survived this, the disturbance in the circulation, under the excitement which would necessarily have followed such an operation, and the exposure of such an extent of surface upon the lower part of the abdomen, perineum, and thigh, would have disposed to organic changes in other parts of the system, destructive to life. As it was, we were seriously apprehensive for some weeks that his lung might suffer.

It may also be a question, whether the risk which our patient ran, and which was undoubtedly considerable, might not have been lessened by different management of the case; during the week, subsequent to the incision being made in the tumour, and especially during the last three days of that period, while suppurative inflammation was going on in its interior? The inflammation and pain would, undoubtedly, have been moderated, and consequently the constitutional disturbance lessened, by keeping the incision open, and by injecting tepid water or mucilage into the cavity; but it was thought desirable that a considerable degree of inflammation and suppuration should be induced in this cavity, sufficient to essentially change the organic action throughout the whole mass; and farther I can only appeal to the result.

This case shows that enormous abnormal productions may be removed, under favourable circumstances, by the natural powers of the system, aided by means at the command of the enlightened surgeon.

NOTE.—This tumour, from its solid contents, must have weighed between 60 and 70 pounds.

ART. V.—*On the Treatment of the Inflammatory Affections of Malarious Districts.* By WM. M. BOLING, M.D., of Montgomery, Alabama.

A PECULIARITY of the febrile excitement produced in the system by, and accompanying local inflammations in those residing in marshy districts, is, that it has a tendency to assume the intermittent or remittent type, as malarious fevers not connected with local inflammations have. Mostly, however,

the fever is *remittent*, and of the quotidian, tertian or double tertian type. So striking is this resemblance in type between the fevers excited by the phlegmasiæ, and the uncomplicated remittent fever, that doubts must often arise, as to whether the fever is the consequence of the local inflammation, or the local inflammation merely an accidental concomitant of the fever.

In many instances, local inflammations are preceded, in malarious districts, by a stage in which the affection is purely neuralgic, and generally remittent, and it is only after several of these neuralgic exacerbations, that the sanguiferous system becomes so implicated, as to constitute what is understood by the term inflammation. Sometimes the neuralgic exacerbations are accompanied by slight febrile paroxysms; sometimes the febrile excitement only supervenes, as the inflammatory character of the complaint becomes developed.

Another striking peculiarity about these inflammations, is the obstinacy with which they resist what is *generally considered* a purely antiphlogistic treatment,—a treatment that would be in most cases speedily successful in the phlegmasiæ of those living in an atmosphere untainted with malaria,—and the facility with which, as a general rule, they yield to a course of practice, applicable, in its peculiar features, to the treatment of the uncomplicated fevers of the same regions. The fatality of these affections, for instance, of the disease generally known as *bilious* or *typhoid* pneumonia, under a purely antiphlogistic treatment, (by this I mean bleeding, tartar-emetic, purging and blistering) or under a systematic exhibition of mercurials; or under another system of treatment pursued by a few physicians of the south; viz., the exhibition day after day of drastic purgatives,—is very great; whereas under the use of gentle laxatives occasionally, mild antiphlogistics, and the free but judicious use of the Peruvian bark or its preparations, the fatality is comparatively limited. Compared with the practice of a few years back, a system of treatment much more judicious and successful, is rapidly being adopted by the physicians of the south, and the number of those who would take pride in boasting of their hundred grain doses of calomel, or the number of *drastic pills* given in a dose, is small, indeed; and this too, notwithstanding the influence of professorial dicta, and college impressions.

Until within the last few years, the Peruvian bark and its preparations were looked upon by almost all physicians as most inappropriate in all the phlegmasiæ, and in all febrile diseases complicated with local inflammatory action,—and indeed they were considered inadmissible in any case of fever until the powers of the system were considerably exhausted, and the febrile excitement in a great measure subdued. They were looked upon only as stimulant and tonic; and with these views, and to fulfil these indications only were they prescribed.

I propose to give a few cases, exhibiting my own treatment, and nearly the method of treatment pursued by a few physicians of my acquaintance, illustrating the beneficial influence of quinine in such cases as I have alluded

to. Some of the cases will be recognized as remittent fevers complicated with local affections, while others will be recognized as local inflammations on the consequent febrile excitement, of which a malarious influence is manifested by a periodical remittance. In all the cases it will be seen that though used as an important or principal remedy, yet it was not the only remedy; and, it may be supposed that I attach undue importance to its influence. In reply, in the earlier periods of my practice, and sometimes recently in my own, but oftener of late in the practice of others, I have treated, and seen treated, such cases as I have described, without quinine; and must say, that among them a much larger proportion of fatal cases have occurred; and in the instances where recovery takes place, the disease was always more protracted, and convalescence more doubtful and vacillating; and again, many times have I witnessed its almost "*talismanic*" influence in the advanced periods of cases, which for a long time had resisted every variety of treatment that could be suggested, in the hands of the most skilful and experienced physicians.

As to the *modus operandi* of quinine, I have been able to form no very satisfactory opinion; the observations of one day generally altering or modifying the opinions predicated upon the experience of a previous day. At one time I was disposed to look upon it as a sedative or contra-stimulant; and as a general rule, this is its most manifest effect; and yet I have seen a *very few* cases in which it *appeared* to act as a stimulant. Its most general effect, however, is that of a sedative; more certainly reducing and controlling the action of the heart and arteries than any remedy with which I am acquainted. At another time I was disposed to think, that this controlling influence was only exerted in those labouring under the influence of malaria; but in the advanced stage of a case of endopericarditis, in which nothing in the circumstances of the patient, or the character of the accompanying fever, indicated a malarious taint, I was able, by administering, night and morning, an enema containing grs. xx. of quinine, to moderate the rapid progress of the disease, and to reduce the pulse from 110 to 80, and to keep it at that standard, so long as the use of the quinine was persevered in. The influence of the quinine was satisfactorily proved by the fact, that the omission of an enema was invariably followed during the next twelve hours, by a rise of the pulse to the original standard. One of the remedies used in this case, before the quinine, was digitalis, which had no effect whatever in controlling the pulse. The case eventually proved fatal, in consequence of its becoming complicated with gastro-enteritis, induced by a moderate, but for the safety of the patient, too free a use of calomel and tartar-emetic. But to return; it would not be considered scientific to call it a specific, and yet, in malarious diseases its effects seem almost *antidotal*. In almost every case, whatever the nature of the disease, supposing the system at the time to be labouring under the influence of malaria, either as the principal curative

agent, or as an important adjuvant, the best effects may be anticipated from its administration.

This I have observed, under its use in the inflammatory affections of the chest, that an abatement in the physical signs almost invariably follows, very rarely precedes, an abatement in the febrile excitement; and a diminution in the action of the heart and arteries. Indeed, under its controlling influence over the sanguiferous system, the action of the heart may sometimes be reduced from a state of high excitement, almost to a natural standard, long before any abatement takes place in the local inflammatory action as indicated by the physical signs. An improvement in the physical signs, however, generally follows in a short time after the influence of the medicine is manifested on the pulse.

It sometimes happens, that, after the exhibition of quinine during a remission, for the purpose of preventing an expected exacerbation, a curious modification of the exacerbation will supervene. Thus, supposing that during the remission in which the quinine is administered, the patient's pulse is a hundred, and his situation upon the whole tolerably comfortable, the exacerbation may come on at the usual hour, with this difference, that the pulse remains unaffected, and rather sometimes diminished in frequency, and the temperature of the skin not greatly augmented, while the sensations of the patient are the same, or even more distressing than during any previous exacerbation. If the disease is an inflammatory affection of the chest, the exacerbation is manifested, together with the sensations of the patient, by the increased frequency of the respirations. The symptoms, and distressing sensations, indicating this modified exacerbation, usually subside at the usual time of the remission; and if the case has been one of simple remittent fever, generally no farther treatment is necessary; the convalescence proceeding from this time, as if the exacerbation had been completely controlled. Should the case, however, have been complicated with inflammation of any organ, a continuance of the remedy for a few days, for the purpose of controlling the action of the heart and arteries, would be proper; or a renewal of the febrile excitement, and of the inflammatory action would be the probable consequence.

CASE I.—*Meningitis*.—September 6th, 1838. Oakley, a negro child about three years old, had a slight attack of diarrhœa eight or ten days ago, and has had, for the last five or six days, considerable pain, which has increased every day since its development. Two days after the accession of fever, it was taken with severe convulsions, which it has had at intervals ever since. It has a slightly tumid abdomen, tongue foul, rather dry, and red at the edges; and considerable thirst, nausea, and vomiting. Pulse 180, hard but small; left arm spasmodically flexed upon the humerus, and the wrist and fingers upon the forearm; while at the same time the hand is permanently supinated, by a rotation of the radial side of the hand under, being a continuation of the usual movement of pronation. There is at times strabismus; the left eye being turned outwards; the right, inwards. There

is a constant rolling of the head from side to side; a low plaintive moaning without tears; and a frequent application of the right hand to the head. There is great heat of the surface; more particularly of the head, and violent throbbing of the temporal arteries. In the early part of its sickness, it took a dose of castor oil; since the operation of which, its bowels have been costive. R.—Hydrarg. c. creta grs. v. immediately. Its head to be shaved, and frequently sponged with cold water; occasionally the cold douche; sinapisms to abdomen and lower extremities. Evening.—Pulse 150. There is an aggravation of all the symptoms; and I now learn, that ever since the attack, from three o'clock in the evening, till one o'clock in the morning, this has been the case. Continue cold applications to head; apply a blister to its neck, and give it ʒij of castor oil; to be followed by enemata, occasionally, till its bowels are freely evacuated. 7th. It had last night a severe convulsion; has had several green slimy evacuations. Pulse 128; blister has drawn well. R.—Quin. sulph. gr. viii. Syrup. limonis ʒi. M:—a tea-spoonful every hour. Evening.—Pulse 140. Strabismus, which was scarcely perceptible in the morning, is now more manifest, though not as bad as it was yesterday morning. Omit the quinine; repeat hydrarg. c. creta gr. v. 8th. Has had severe operations of the same character; pulse 116; tongue a little moist; strabismus scarcely perceptible; and spasm of left arm considerably diminished. R.—Quin. sulph. gr. viii. syrup rhei arom. ʒi.; a tea-spoonful every hour. Evening.—It is much the same, but apparently less thirsty. Continue quinine, one grain every third hour; repeat hydrarg. c. creta gr. v. 9th. In every respect, apparently very much improved. Pulse 107; eyes straight, and spasm of left arm almost entirely relaxed. Has taken a little boiled milk; the first thing it has swallowed willingly since its sickness except water. The quinine was continued a few days longer; one grain every fourth hour; and a gradual improvement took place, till the establishment of complete convalescence.

CASE II.—*Disease of the brain—convulsions, &c., occurring in connection with remittent fever.*—Oct. 14th, 1843, I visited an overseer, about eight miles from town; and after prescribing for him, was asked to examine and prescribe for his child, a little girl about six months old. She was taken sick about two weeks ago, with, from what I could learn, a pretty severe attack of remittent fever. About the third day of the fever, she was taken with convulsions, of which in the course of a few days she had some three or four paroxysms. During the fits, the extremities of the right side were more convulsed than those of the left; and they are now paralyzed. The power of motion of the left side is unaffected. Its body has a pale waxen appearance, there being an uniformity of colour over the whole surface; there is present a peculiar glossiness of the cheeks, and a plumpness astonishing after so long and so severe a sickness. The eyes have a dull inexpressive appearance, and the pupils are very much contracted; tongue dry and covered with a white coat; it has considerable thirst, and at times vomits a green watery fluid; bowels have been rather loose than otherwise, the evacuations being green, thin, and slimy; spleen enlarged; abdomen tumid; pulse 160, small and jerking; surface hot, more particularly about the head and face; a *very loud* bellows murmur is heard by applying the stethoscope to the anterior fontanel. I directed two grains of calomel to be given immediately, and one grain of quinine every second hour, till eight grains in all should be taken; a blister to the back of the neck; head to be frequently sponged with cold water; warm pediluvia and sinapisms to the extremities.

Oct. 15th. The child is very much improved; its tongue is moist; the temperature of its body diminished, and its pulse is only 130, and fuller and softer. The paralysis continues unimproved, and the appearance of the eyes is the same; the cephalic bellows murmur has diminished in loudness, about in proportion to the diminution in the jerking character of the pulse. It has had three green slimy evacuations; in place of the dry, polished feel of the skin it is moist and pleasant. *R.* Quin. sulph., gr. viii.—*D.* in pulv. iv; one to be taken every sixth hour.

16th. It has scarcely any fever; pulse 110; skin cool and moist; tongue clean and moist; eyes have a better appearance; the paralysis remains undiminished; it takes the breast with avidity. *R.* Quin. sulph., gr. i, every fourth hour. I did not visit it again, but learned from its father, three weeks after my last visit, that it continued to get better from that time. It had not, however, entirely regained the use of the paralyzed side, though it had improved, and was still continuing to improve.

CASE III.—Acute Bronchitis—Remittent Fever. On the night of July 7th, 1841, I was called to see George Philpot, a little boy two years and a half old, who, the messenger said, had the croup. He had been feverish, and had had a slight cough for several nights. The present exacerbation of fever came on at 4 o'clock this evening, and is now very high; pulse 160, and moderately full; skin hot; thirst very great; face flushed; cough incessant; respirations 60, and great difficulty of breathing; a loud sonorous râle is heard in every part of the chest. I took about two ounces of blood from his arm, applied a mustard-plaster to his chest, and prescribed, of calomel and ipecac., each, gr. ii, immediately, and the ipecac. to be continued in half grain doses every hour, or to be regulated so as to keep up a continual nausea with occasional vomiting; I likewise directed an enema to be administered in about two hours after the first dose.

July 8th. Has had two evacuations from his bowels, and has vomited some five or six times through the night; he is in every respect much improved; pulse 140; respirations 38; skin and tongue a little moist: the dry sonorous râle is changed to a coarse moist mucous râle, scattered here and there over all parts of the chest; cough loose and less frequent. Continue the ipecac. Evening.—He is much the same, but has a little more heat of skin. Continue the ipecac., but less frequently. At 10 o'clock at night I was again called to him. His fever has increased rapidly since I saw him; pulse 170; respirations from 68 to 70, and very laborious; sonorous and sibilant râles heard in all parts of chest. A strong mustard plaster to be applied to chest; his feet to be kept immersed in warm water for some time, and then to be rubbed with mustard; ipecac., gr. i, to be given every half hour till free vomiting takes place, after which it is to be continued in sufficient doses to keep up constant nausea.

9th. Skin moist; pulse soft, 144; respirations 40; mucous râle again has taken place of the dry sonorous and sibilant râles; thirst diminished, and tongue less dry. *R.* Quin. sulph., gr. xii; sacch. alb. gr. xx.—*M.* and *D.* in chart. viii; one to be given every hour. Evening.—He is in a free perspiration; his pulse 120; respiration 32; cough loose, and apparently causes no pain; cheerful, and has been sitting up in bed. *R.* Quin. sulph., gr. viii; sacch. alb. gr. xvi.—*M.* and *D.* in chart. viii; one to be given every third hour.

10th. Pulse 102; respiration easy; expectoration free; skin moist. Con-

tinue same. Evening.—Pulse 96. He rapidly recovered under a continuation, for a short time longer, of the quinine.

CASE IV.—*Pneumonia, &c.*—July 7th, 1843. I was called to see — Coffey, a negro girl, four years and a half old. She was taken on the evening of the 5th with fever, attended with considerable cough. In the course of the night her fever abated, and she was up and playful on the 6th, till 5 o'clock in the afternoon, having, however, slight fever all day. At this time her fever rose with great violence, accompanied by an incessant cough. During the night she took a sufficient quantity of ipecac, at intervals, to produce emesis. Present state, (which they say is a considerable improvement on what her condition was through the night,) pulse 140, very weak; respirations 106; cough incessant; no expectoration; body and head hot; extremities cool; tongue dry, edges red, and dorsum covered with a smooth white coat. Slight dulness on percussion just below inferior angle of left scapula, and around this part the crepitant râle is heard. Over all the other parts of the chest, dry, sonorous, and sibilant râles are heard, with here and there a slight crepitant râle, sufficient in all parts completely to prevent a pure respiratory murmur from being heard. R. Pulv. ipecac. gr. i, every ten minutes, till free emesis takes place. (Bad as her condition is at present, it is undoubtedly the early part of a remission, and at 4 or 5 o'clock in the evening an exacerbation will take place, which in all probability, if left uncontrolled or unmodified by treatment, will prove fatal). R. Quin. sulph., gr. xii—D. in pulv. iii, one every third hour, so that the last one may be taken at 3 o'clock; sinapisms to extremities. Evening.—Pulse 135 and fuller; respirations 90; auscultatory signs the same, with the difference that the râles do not altogether prevent the respiratory murmur from being heard in parts of the chest; sweating freely about the head; temperature of the surface more equable; tongue a little moist. R. Hydrarg. sub. mur., gr. v, immediately; and gr. i. of ipecac. every hour through the night.

July 8th. Pulse 120; respirations 70; tongue rather more dry than it was last night; auscultation the same; has had two operations, and vomited once in the night. R. Quin. sulph. pulv. ipecac. ãã gr. xii; ant. potass. tart. gr. i; mucilage acaciæ, ʒij.—M., take a teaspoonful every hour. Evening.—Pulse 130; respirations 80 when asleep, but when awake and after the least exertion, 110; dilatation of alæ nasi at each inspiration. Continue the mixture, but increase the quantity of quinine in it to xxiv grs.

9th. Pulse 112; respirations 44; respiratory murmur heard all over chest, somewhat obscured by a scattered sonorous râle, more especially on left side postero-inferiorly. She retains the medicine well. Evening.—Pulse 120; respirations 48; she has had three or four thin bilious evacuations. Continue the mixture every second hour.

10th. Pulse 114; respirations 40; a scattered sonorous râle heard only here and there. R. Pulv. ipecac. gr. viii; ant. potass. tart., gr. ss; mucilage acaciæ ʒi, a teaspoonful every second hour. Evening.—The same.

11th. Pulse and respirations the same; bowels have been very open, and the discharges thin and watery; skin cooler than it has been; she seems a good deal prostrated; tongue fiery at the edges, and covered on the dorsum with a thick brown coat. R. Mist. creta., ʒi; Tr. opii camph., ʒij.—M., a teaspoonful every second hour; mucilaginous drinks. Evening.—Pulse 120; respirations 36; cough has almost entirely ceased; no physical signs of disease of the lungs or bronchia; tongue very dry; thirst very great; disgust for food; tunica sclerotica very yellow; has vomited frequently through the day, and has had several thin, watery evacuations. Continue

the mixture and mucilaginous drinks. Sinapism to abdomen, to be followed by a large moist poultice.

12th. Purging and vomiting have ceased; in other respects she is much the same. Continue mucilaginous drinks.

13th. Tongue a little moist; in other respects she is much the same. From this time the improvement was regular, but tedious. The tongue gradually became clean and moist; the evacuations from the bowels more natural, and a gradual return of the appetite took place, all indicating a progressive improvement in the state of the stomach and bowels. By the 18th, she was almost entirely clear of fever, and had some little desire for food; but she was not considered safe till about the 24th.

In this case an occurrence took place which is by no means unusual with us here, in the treatment of acute thoracic diseases, particularly when tartar emetic or calomel is used to any extent, and more especially when they are used in combination, viz., the supervention of gastro-enteritis, about the time or soon after a considerable amendment has taken place in the original disease. Sometimes, indeed, the secondary disease, and that very rapidly too, proving fatal after all evidences of disease of the lungs have disappeared. Of that character is the following case.

CASE V.—*Pneumonia succeeded by congestive gastro-enteritis, &c.*—Jan. 4th, 1843. Was called to see Frank Reynolds, a stout young man, twenty years old. Yesterday morning about 11 o'clock, (having felt a little unwell, and had a slight cough and pain in the right side for several days,) he was taken with a slight chill succeeded by some fever, and a rather severe cough and acute pain in right side. This morning, about 10 o'clock, he had another slight chill, and about 12, one much more severe. Now, (2 o'clock,) cough constant; expectoration scanty; pain in right side very severe; headache; thirst; skin hot and dry; tongue white and rather dry on dorsum; pulse 120, full and hard; respirations 40; dulness on percussion over lower part of right lung, and a little higher up, a coarse, crepitating râle. V. S. to xx oz.; calomel, gr. xv, to be taken immediately, and to be followed in two hours by an enema; after the operation of which, he is to commence taking, every second hour, a tablespoonful of the following mixture. R. Ant. potassæ tart., gr. iv; Tr. opii. gtt. xxxii; mucilage acaciæ, ℥iv—M. Evening.—His fever has abated; he has vomited a little once, and has had three evacuations from his bowels; expectorates with tolerable freedom a tenacious, transparent, yellowish mucus, mixed at times with a small quantity of a dark brown matter. Blood which was taken in the morning, is covered with a thick and tough buffy coat. Continue the mixture every fourth hour, but double the dose, and in addition: R. Quin. sulph., gr. xxiv, divide in parts three, one to be taken at midnight, one at four, and the other at eight o'clock in the morning.

5th. Pulse 108; respirations 30; pain less severe, and cough less troublesome; expectoration the same; tongue moist; no vomiting. Continue the antimonial mixture. Evening.—At 11 o'clock, his fever commenced rising, without being preceded by a chill; pulse 116; respirations 38; skin hot and dry; thirst increased; no vomiting, and very little nausea. R. Quin. sulph., gr. xxxii; antimon. potassæ tart., gr. ii; ext. glycyrrhiz. syrup simp.

āā q. s. Ft. mass, in pil. viii, D.; one every second hour. V. S. to xii oz.; calomel, gr. x, immediately.

6th. Pulse 100; respirations 30; cough less troublesome; expectoration easy, and of the same character; skin and tongue moist; three bilious evacuations; no vomiting, and but slight nausea; very little thirst; dulness diminished. Evening.—As he was in the morning. Continue the same.

7th. Very much improved; pulse 80; respirations 24; slight crepitant râle; no dulness; perspiring freely; tongue moist and relaxed. Continue the pills every third hour. Evening.—The same.

8th. A slight improvement on yesterday; no pain in side; no dulness, and crepitant râle heard over a very small space. Pulse 78, and full and soft; skin moist and cool; tongue moist; no thirst; some little desire for food; cough very trifling. Omit the quinine. R. Ant. potassæ tart., gr. ii; Tr. opii, gtt. xvi; aquæ pur., ℥iv.—M., a tablespoonful every second hour. Evening.—Still doing well. Continue the mixture.

9th. He is much worse. About midnight the perspiration ceased, and his skin gradually became hot and dry; he became restless and uncomfortable, but complained of no definite pain; vomited once, and had several thin, serous evacuations. His tongue is at this time dry, and fiery at the edges; abdomen tympanitic, (up to this time it has been soft and relaxed;) great thirst; nausea; restlessness and anxiety; skin and eyes yellow. Pulse 128, small and soft; *no dulness; no râle; no cough.* R. Hydrarg. subm., gr. x; pulv. opii, gr. ii.—M. & D. in chart. iv, one to be taken every third hour. Blister to abdomen; mucilaginous drinks. Noon.—All the symptoms aggravated; great nausea; restlessness and thirst; skin and eyes intensely yellow; tongue parched, brown, and cracked; teeth covered with a black sordes; delirium. Pulse 140, small and weak; extremities clammy. Continue the powders, with the addition of a grain of camphor, and a grain of cayenne pepper to each. Sinapisms to extremities. Evening.—In addition to an aggravation of all the previous symptoms, he is vomiting up large quantities of a black matter, having much the appearance of pulverized extract of liquorice dissolved in a thin mucilage of slippery elm. Dr. Holt now saw him with me; he died about dark; no post-mortem examination.

CASE VI.—*Bronchitis.* Violet, a negro woman, about 45 years old, was taken with a high fever and cough on the 24th of August, 1843. Up to the time I was called to see her (Aug. 31st) she grew worse every day, and for a short time back has appeared a good deal worse at night. Her master says that he thought she would have suffocated from accumulation of mucus in the bronchi last night, and that her pulse was so frequent he could not count it. Pulse now 120; respirations 44; tongue moist, broad, and relaxed, and coated with a white fur; skin hot and dry; acute pain in right side, and all along the course of the junction of the diaphragm with the ribs. This latter she attributes to the violence of her cough; expectorated with difficulty a good deal of tough frothy mucus tinged with blood; mucous râle heard in almost every part of the chest, with here and there a loud sonorous râle. She has taken a dose of calomel and one of oil, which operated freely on her. R. Quin. sulph., gr. xxxvi; extract. cinchonæ, gr. ix.—M. fiat pilul. ix, two of them to be taken immediately, two in two hours, and one every second hour after. Should there be extreme danger of suffocation to-night from accumulation of mucus, she is to take an emetic of sulphate of zinc and ipecac.

September 1st. Pulse 116; respiration 34; skin cool and moist; cough

almost as bad as yesterday; stethoscopic signs the same; last night's exacerbation was not near so bad as the one of the previous night; for the last two nights she has scarcely slept any. *R.* Quin. sulph., gr. xxiv; extract. cinchonæ, gr. vi.—*M.* fiat pilulæ vi, one of them to be taken every third hour; and *R.* Pulv. ipecac. et opii, hydrarg. c. creta, āā gr. xv.—*M.*; to be taken to-night before bed time.

2*d.* Through mistake only three of the pills were taken yesterday. Last night she was thought to be dying, but recovered after the administration of the powder and some brandy toddy. Pulse this morning 120, but increases to 140 on the least exertion; respirations 40, and very laborious; she can only breathe now with any degree of comfort in a semi-recumbent posture; tongue rather dry, with a brown streak on the dorsum; gums a little sore; auscultation the same, with here and there a fine sibilant râle. *R.* Quin. sulph., gr. xxxvi; extract. cinchonæ, gr. xii.—*M.* fiant pilulæ, xii; two of them to be taken every four hours. Evening.—Pulse 120; respirations 30; other symptoms as in the morning. Continue the pills, and repeat the powder of hydrarg. c. creta and Dover's powder.

3*d.* Pulse 104; respirations 28, and less laborious; expectorates more freely. Continue the pills. Evening.—Again the pills have not been administered regularly, owing to the obstinacy of the patient. Pulse 120; respiration 36. Continue the pills, which she has promised to take as directed; repeat the powder.

4*th.* Pulse 112; respirations 28; had two dark consistent evacuations last night. Continue the pills. Evening.—To-day about noon she was taken with griping pains in her bowels, followed by five or six thin dark evacuations in quick succession, (the effect, no doubt of the hydrarg. c. creta,) and as she appeared to be sinking very fast under their influence the pills were suspended, as the operations were attributed to them. She took thirty drops of laudanum to arrest the discharges. Pulse 128, and very much quickened on the least exertion; respirations 36; tongue brown, dry, and cracked; great thirst: stethoscopic signs the same; cough very frequent; expectoration scanty, and streaked with blood. She is able, however, to rest more in the recumbent posture. *R.* Quin. sulph., gr. v; ext. cinchonæ, gr. ii, every fourth hour; mucilaginous drinks; *Tr.* opii, gtt. x, after each operation.

5*th.* In spite of the free administration of laudanum she had five or six large thin dark evacuations last night; tongue, cough, expectoration, and stethoscopic signs the same. She is very weak, and had to take brandy toddy occasionally through the night. Pulse 120; respirations 30. *R.* Quin. sulph., gr. vii; extract. cinchonæ, gr. xxiv; acid sulphuric, gtt. xx; aquæ puræ, ℥iii.—*M.*; a tablespoonful to be taken every third hour; repeat *Tr.* opii pro re nata. Evening.—Pulse 116; respiration 38; perspiring freely on head and face; has had three frothy evacuations somewhat resembling yeast. Continue the same.

6*th.* Pulse 108; respirations 26; one operation last night. Evening.—Pulse and respiration the same; expectorates with more ease; tongue moist. Continue the mixture every fourth hour.

7*th.* Pulse 106; respiration 22; says she feels much better. Continue the same.

8*th.* Pulse 100; respirations 20, free and easy; skin cool and moist; cough less troublesome; expectorates freely an opaque yellowish mucus without any blood; a coarse moist mucus râle only heard here and there over chest. Continue the mixture.

9*th.* Pulse 80; respirations 20; tongue clean and moist; and in fact in every respect she is much better. Continue the quinine mixture every sixth

hour, and occasionally a teaspoonful of the following mixture. R. Ol. terebinth., ℥ss; Tr. opii, Tr. lobeliæ, āā ʒij; mucilage acaciæ, ʒiiiss.—M. Under a continuation of this treatment she was convalescent in a short time, but continued quite weak for a good while. It will be observed that on the several occasions on which the quinine was partly omitted, an aggravation of all the symptoms occurred.

CASE VII.—*Dysentery.* September 3d, 1843, David H. Carter, 28 years old, says that for several days he has felt unwell, and that on the night of the 1st he was taken with diarrhœa, which gradually became more painful and troublesome, till at length it has terminated in severe dysentery. Since early last night his stools have been small, frequent, slimy, and bloody, and accompanied with severe griping pains; and a sensation of coldness in the bowels. In addition to the pains already alluded to he complains of a fixed and deep-seated pain in the epigastrium. He has slight nausea and vomiting; pulse free and moderately firm; heat of skin very little above the natural standard; considerable thirst; tongue foul and red at the edges. R. Massa hydrarg., gr. xx; pulv. opii, gr. ii.—M. and D. in pil. iv; one to be taken every fourth hour; gum-water to be his only drink. Evening.—Has less pain, and has had but one operation since morning.

4th. Is much as he was yesterday morning; had several operations in the night composed of bloody mucus, and attended with considerable griping; complains of headache.

5th. Has taken no medicine since yesterday noon; had several operations, with a good deal of straining and griping in his bowels, last night; pulse full and firm. V. S. to twelve ounces; repeat pills every sixth hour. Evening.—Says he feels better. Repeat pills every eighth hour.

6th. Four operations of the same character last night; considerable tenderness of abdomen. Continue pills. My attention was now directed to the fact that the operations from his bowels were more numerous at night; and that he has always in the morning complained more of pain through the night than he has in the evening of pain through the day. By questioning him closely I discovered that he had, every night, considerably more fever than in the day, indicated by increased thirst, headache, abdominal pains, &c., and that every night about 9 o'clock the operations from his bowels commenced. At 10 o'clock at night I visited him, and found him suffering much from severe griping pains, headache, thirst, &c.; skin hot and dry; pulse 100, full, and rather hard; tongue dry and brown on dorsum; he has, since 9 o'clock, had two evacuations, composed of a bloody mucus floating in a thin blackish fluid. R. Mist. creta, ʒiss; Tr. opii camphorat., ℥ss.—M.; a tablespoonful after each operation; V. S. to sixteen ounces; a sinapism to abdomen; to be followed by a large mush poultice, and to be renewed three times a day.

7th. Had one operation after I saw him last night. He is much as he was yesterday morning; pulse 80; slight thirst; tongue less dry than it was last night. R. Quin. sulph., gr. xxiv; pulv. opii, gr. j; extract. taraxaci, gr. viii.—M. fiant pilulæ viii; two of them to be taken every third hour. Evening.—Has taken all the pills; repeat them; one every third hour through the night; chalk mixture, pro re nat.

8th. Says that he rested better, and has had much less pain, thirst, &c., through the night than usual. Had one operation, composed of a dark watery fluid, with a little bloody mucus suspended in it; had no fever, and perspired freely all night. Repeat the quinine and opium pills.

9th. No evacuations from his bowels last night; he has neither thirst nor heat of skin, but yet he does not feel as comfortable as he did yesterday morning, owing, he says, to a sensation of fullness above the pubes, and a sharp pain which frequently darts across the abdomen in the direction of the transverse arch of the colon. R. Ol. ricini, ʒi ; ol. tereb., ʒi ; pulv. acaciæ, ʒij ; sacch. alba, ʒss ; aqua cinam., ʒiii .—M.; half to be taken immediately, and the other half at the end of three hours if the first does not operate in that time. Noon.—He had a large thin yellow evacuation from his bowels before the mixture could be procured, after which he felt much relieved, and consequently did not take it. R. Quin. sulph., gr. xxiv; extract. tarax., gr. viii.—M., fiant pilul. viii; two of them to be taken every second hour.

10th. Much better; pulse 70; skin cool and moist; tongue moist; no thirst; no evacuations from bowels, and very little pain; some desire for food. Continue the quinine pills, one every third hour. Evening.—Pulse 62, soft and full; in every respect he is much improved.

On the 12th he had a slight relapse from imprudence in his diet. For several days he had at times some griping, and his evacuations contained a little bloody mucus; the nightly exacerbations, however, returned no more. He took during this time a grain of calomel and half a grain of opium twice a day, and continued likewise the quinine pills, one every third hour, under the use of which his pulse was kept to from 64 to 70, full and soft, and his skin moist. From the time he was taken sick to the 10th he ate nothing, using only gum-water for his drink, consequently he was a good deal debilitated. He took no medicine after the 15th, and on the 18th I ceased to visit him.

CASE VIII.—Jackson, a young gentleman, 24 years old, was attacked on the 21st Oct. 1840, severely with dysentery, attended with high febrile excitement. Up to the 28th, the time I was first called to see him, he has been principally treated with mercurials, of which he had taken, he said, very freely. He had also been bled once, and blistered over the abdomen.

Present state, (9 o'clock, A. M., 28th). Skin hot and dry; tongue red at edges, parched, and covered on the dorsum with a thick brown coat; teeth dry; gums swollen; several small ulcers on the insides of his cheeks, the effect, no doubt, of the mercurials; distressing nausea, and vomiting frequently of a grass-green fluid; as often as every fifteen or twenty minutes he has a small bloody mucous operation, attended with the most excruciating griping and tenesmus; thirst intense; pulse 130, small and hard. Says he has taken, with scarcely any alleviation, several large opium pills. R. Magnes. sulph., ʒi ; magnes. calc., ʒi ; aqua cinam., ʒviii .—M.; a wine-glassful to be taken every hour till an alteration in the character of the stools indicates its action on the bowels. He vomited several times while taking it; nevertheless the fourth dose was succeeded by several thin bilious evacuations containing very little blood and mucus, and passed with much less pain. After this he was comparatively easy till about 10 o'clock at night, when his pulse rose, the heat of skin, thirst, nausea and vomiting, &c. increased, and the evacuations became as frequent as ever, mucous and bloody, and attended with the same distressing pains; he was likewise slightly delirious. During the night he took one or two small portions of morphine; had a warm poultice kept constantly on his abdomen, and was allowed only gum-water in small quantities to drink.

29th. A little abatement in the symptoms; pulse 130; skin not so hot, and thirst, nausea and vomiting somewhat diminished; operations of the

same character, but less frequent, not oftener than once every three quarters of an hour. I now suspected that he had exacerbations, coming on late in the evening and continuing through the night, and by a close investigation discovered that this had been the case from the beginning. R. Quin. sulph., gr. xxiv; morph. sulph., gr. i; mucilage acaciæ, q. v.;—fiant pilul. vi; one of them to be taken every second hour; sinapisms to extremities; continue gum-water and poultices to abdomen. I now left him with the promise to see him again at night. Evening.—After taking a couple of the pills, and throwing one of them up, his nausea became so great that he could not be prevailed on to take any more. His fever is again on the increase.

30th. He passed, if any thing, a worse night than the last, the treatment pursued being much the same; a slight abatement in the symptoms this morning. In hopes that it would enable him to retain the quinine on his stomach, I gave him, at one dose, a half a grain of morphine, and when fully under its influence directed a four grain quinine pill to be given every second hour. Evening.—The morphine had the effect of moderating the nausea in a slight degree, but he retained only two of the pills; he has slept some, and has had fewer operations; he is, in other respects, much as he was yesterday.

31st. He passed last night very much as he did the night before, with incessant nausea and vomiting of a greenish flocculent matter, suspended in a glairy fluid; pulse 148, small and corded; tongue black, parched and cracked; operations, composed of a bloody mucus suspended in a reddish fluid, every 20 or 30 minutes; skin hot and dry; great prostration; teeth dry and covered with a black sordes; as is usual in the morning, a slight abatement in the severity of the symptoms has taken place. I now determined to administer the quinine by the rectum, and to prepare him to retain it, gave him an enema composed of Tr. opii, ʒi; starch, ʒij. It was rejected in a few minutes. I immediately repeated it, and this one was retained a couple of hours; I now administered gr. xxx of quinine; gtt. xx of laudanum in ʒii of starch; this, at the end of two hours, he still retained. I now left him, directing the enemata to be continued, one every third hour, and the quantity of laudanum varied according to the effect. Evening.—He retained the two first enemata until nearly time to administer the third; the third and fourth each he retained about two hours, discharging with them a small quantity of bloody mucus; he has slept soundly, and has been perspiring some this afternoon; pulse 128, fuller and softer; thirst, nausea and vomiting somewhat diminished. Continue the enemata with forty drops of laudanum in each.

November 1st. As heretofore, an exacerbation occurred last night, but much less severe than the previous one, his pulse at no time rising over 135; the enemata were not well retained, and he had some six or seven operations. I gave him another enema containing ʒi of laudanum, and directed the quinine enemata to be continued as yesterday. Evening.—Pulse 116, full and soft; skin moist; thirst diminished; has had but three evacuations. Continue the enemata.

2d. Is much as he was yesterday evening; did not retain any of the enemata more than an hour. R. Morph. sulph., gr. $\frac{1}{2}$, immediately; continue the enemata. Evening.—Pulse 100, full and soft; tongue moist, and a free discharge of saliva has taken place; perspiring freely; has had several evacuations composed partly of a dark-consistent bilious matter. Continue the enemata every fourth hour.

3d. Pulse 96; skin moist, and tongue moist and nearly clean; scarcely

any thirst; two evacuations through the night with very little pain. Continue the enemata. Evening.—Pulse 84; no thirst; neither desire nor disgust for food. Continue enemata every sixth hour. This was continued a day or two longer. His appetite soon returned, and his recovery was rapid. He has complained of deafness since the enemata were commenced.

CASE IX.—*Metrorrhagia—Inflammatory Engorgement of Cervix Uteri.* December 3d, 1843, I was called to see Betsy, a negro woman 35 years old, from whom, about six months ago, a fleshy mass, either a mole or an uterine polypus, as large as a turkey's egg, had been expelled after several days of severe pain, attended with flooding. For the last two days she has had violent pains, resembling colic, in the lower part of her abdomen. Her catamenia have been regular for the last four months, and a few days ago she had them in the usual quantity, and without pain; she has no fever.

I prescribed a dose of castor oil and the warm bath, the operation of the oil to be followed by a full opiate, and left her, believing that she would require no farther attention. On the 9th I was again called to see her, and learned that after the operation of the oil, and the administration of the opiate, she was considerably relieved; but that the next evening the pains began to increase, and gradually became again very severe, attended likewise with a pain in the back, and a fixed pain just above the pubes. On the 6th she was taken with uterine hæmorrhage, which has continued on her, rather profusely, up to the present time. She is a good deal weakened from loss of blood; pulse a little quickened; some thirst, and increase of heat of skin; and she complains of scalding and difficulty in urinating. I prescribed sugar of lead and opium in full doses; quiet, in the recumbent posture, with the hips a little elevated; low diet, cooling drinks, &c., which were persevered in to the 12th, with very little alleviation of pain, and no abatement in the hæmorrhage. She is now (12th) quite feverish, and more prostrated. Questioning her relative to the matter, she informed me that always at night she felt thirsty and more feverish, and that the pain and hæmorrhage were much more severe than through the day.

Examination per vaginam.—Mucous membrane of vagina hot and swollen; cervix uteri of the natural length, but enlarged to treble the natural size; hard, hot and exquisitely sensitive. R. Quin. sulph. ʒiiss; extract. hyoscyami, gr. viii; aquæ, ʒii.—M. A teaspoonful to be taken every two hours, and continued until one half of it is taken; to be commenced with early to-morrow morning; the other half to be taken the same way the next day; warm bath and sinapisms to back and lower part of abdomen to-night. I was unable to see her again till the 19th, when I found her convalescent, and learned that on the 18th she continued to have some pain and hæmorrhage, but rested much better at night; about noon on the 14th the hæmorrhage ceased, and has not returned since. She continued to have slight pains in the pelvic region for a day or two longer. She says she is now entirely well, with the exception of weakness.

CASE X.—*Acute Inflammation of Neck of Bladder—Incontinence of Urine, &c.* On the night of October 6th, 1843, I was called to see Mrs. —, a lady recently married, 18 years old, and six months advanced in pregnancy. On the 4th she had a slight chill; she has been feverish for several days. This evening she was taken with most excruciating pains in the neck of the bladder and urethra, after the continuance of which, for a couple of hours, she became unable to retain her urine. It is now dribbling

from her guttatim; she complains of violent pains in and about the neck of the bladder, and scalding and soreness of the vulva; pulse 96, full and hard; headache; thirst, and increased heat of skin. She likewise complains of a deep-seated pain just above the pubes, from which she has suffered more or less ever since a febrile attack which she had three or four months ago, attended with an "affection of the bladder."

Her urine, after standing some time, deposits a white pulverulent matter, mixed with, or suspended in a stringy mucus. R. Massa hydrarg. gr. x; morph. sulph. gr. ss.—M. fiant pilulæ, ii. One of them to be taken immediately, and the other at the end of three hours, if in that time she is not more comfortable. V. S. to xii oz; warm bath.

October 7th. Pulse 78, softer; skin cooler; she is more comfortable, and can retain her urine, and has less pain and burning in neck of bladder and vulva; bowels costive. R. Massa hydrarg. gr. x; extract. colocynth. c. gr. xv.—M. fiat massa. in pilulos v dividendo, to be taken immediately. Evening.—Pulse 90, full and hard; skin hot and dry; thirst; no evacuation. She is again unable to retain her urine, and is in as much pain as she was last night. Repeat the warm bath and morphine; to be followed towards morning by a saline cathartic.

8th. Pulse 80; she is much as she was yesterday morning; has had two operations. R. Quin. sulph., gr. xxiv; extract. tarax., gr. vii.—M. ft. massa in pilulos, viii dividendo, two of them to be taken every two hours. Evening.—Pulse the same; no thirst; retains her urine, and has no pain scarcely, except above the pubes; some roaring in her ears. After this she had no return of the incontinence of urine, and the pain in the neck of bladder and urethra, and the soreness of the vulva gradually subsided under a continuation of the quinine.

In a few days after this she was taken with a mild attack of leucorrhœa, which yielded to a small quantity of copaiba and weak injections of sulphate of zinc. The pain above the pubes was improving, and the urinary deposit diminishing, when I last saw her,—a month after the attack,—under a mild mercurial course, and the use of an infusion of diosma, juniper berries, and uva ursi.

Acute rheumatism is, in this climate, rather a rare disease. In a practice of seven years I have treated but two cases. They both proved fatal. My notes of the cases are very imperfect; but as to both of them I administered quinine; and as its applicability to the treatment of this disease is now being discussed, I am induced to mention the result, and to give such a detail of them as I can gather from my very brief notes.

CASE XI.—*Acute Rheumatism, &c.* July 16th, 1841, I visited J. G. I., a stout, robust carpenter, of rather intemperate habits, and found him suffering under a very severe attack of acute rheumatism of the right knee. He had likewise severe pain in the right side, cough, and accelerated respiration; and percussion and auscultation gave evidence of the existence of pneumonia (in Stokes's third stage) in the lower lobe of the right lung. The stethoscope likewise gave indications of the existence of pericarditis. He had been sick five or six days, but up to the present time had refused to call a physician.

My notes merely say, generally, that the remedies used up to the 23d were venesection, tartar emetic, calomel and opium, and blisters, without any abatement in the severity of the symptoms. On the 23d, before day, (at

this time there was generally less febrile excitement,) I gave him an eight grain dose of quinine, and so much worse did he become in the course of the day that I was at the time, and am yet, disposed to ascribe to it an earlier termination of the case.

He died on the 24th. On a post-mortem examination considerable inflammation of the stomach and bowels was found, inflammation of the right lung, with hepatization of its lower third, and some shreds of coagulable lymph on the surface of the heart.

CASE XII.—*Acute Rheumatism.* S. M., a delicate lad, 11 years old, after having spent part of the two previous days fishing and wading through a small branch, was taken, on the 23d of April, 1841, with violent pain in the right knee, attended with great heat, swelling, and redness of the part, and with high febrile excitement. On the 24th his father took a small quantity of blood from his arm, and gave him a dose of castor oil, which operated well. On the morning of the 25th I visited him, and found him with a hard, quick pulse, knee so extremely painful that he could not bear the least motion in it, and he had not slept any in the last twenty-four hours. *He was not delirious*, but there was a quickness in his manner, and a sternness of expression about his face altogether out of character with him.

I took eight ounces of blood from his arm, and directed a grain of calomel and a quarter of a grain of ipecac. every second hour till his bowels should be freely evacuated. After I had bled him he seemed very much relieved, observing that his *knee was quite easy*, but complained of some pain in his head. The blood was very much buffed.

I had scarcely reached home (a distance of two miles) before a messenger, who had been despatched a few minutes after me, arrived for me to visit him again in haste. I returned, and found him *quite delirious*, the *knee much less red and swollen*, and from the free manner in which he moved it, must have been much less painful. I had his feet and legs immersed in warm water; applied a sinapism to the knee, and blisters to the calves of his legs, and bled him again to about four ounces; continued the former prescription, with directions; after it operated to give him four grains of Dover's powder.

On the morning of the 26th he awoke out of a nap, which had lasted four hours; quite rational, and in every respect appeared a little better; but knee more painful and swollen than yesterday. On the 27th he continued much the same, but was delirious for a few minutes always when he awoke. Pain and swelling of knee again diminished, but he complains a good deal of the space between the knee and hip. On the 28th his left elbow became very hot and painful, and very much swollen, and the pain in his thigh and knee subsided almost entirely. Up to the 30th he was treated principally with calomel, colchicum, tart. emetic, and Dover's powder, and the severity of the disease, with the exception of the relief of the delirium, but slightly diminished. *He had an enlarged spleen*, lived in a highly malarious locality, and had once, every twenty-four hours, a slight abatement in the febrile excitement. On these grounds I determined to give him the quinine, and accordingly prescribed two grains every two hours. Under its use he certainly appeared to improve. His pulse which, up to this time, had ranged from 130 to 140, was speedily reduced to 112; his skin became moist, and his thirst less intense; his knee became entirely easy, and his elbow very much relieved. On the 31st he continued much the same. Dr. Ames saw him with me, and advised a continuation of the quinine, two grains every

third hour. On the morning of the 1st of May I visited him, and found him, as I thought, in a very favourable condition. His pulse was a little over 100, full and soft; skin moist, and he was, and had been for the last two days, rational at all times. I left him under the impression that he was doing well. About half an hour after I left him he was raised up in bed to take a drink of water, fell back suddenly and expired in a few minutes. At no time during the progress of the case did the stethoscope give any indications of disease of the pericardium or heart.

Remarks.—The first of these cases was certainly a very bad one, and probably would not have recovered under any treatment. As to the immediate cause of death in the latter I cannot pretend to decide.

The administration of the quinine would probably be condemned by a large majority of the profession, and, in all probability, most strongly by those who are practically least acquainted with the remedy, and whose knowledge of it is limited to some theoretical notions, founded upon its supposed highly stimulant properties. I do not think that the result of this case alone would deter me from using it again in similar cases.

The following cases will probably be considered out of place in an article on inflammatory affections. I give them, however, as interesting specimens of a few of the various forms which malarious diseases assume.

CASE XIII.—Remittent Fever—Gastro-enteralgia, &c. August 19th, 1843.—John Mitchell, 40 years old, says that on the 15th and 16th he had slight fever, with most intense pains darting through the right side of his head, both coming on about noon, and lasting till after midnight. On the 19th, at the same hour, his fever and headache returned, together with most excruciating pains in the abdomen, more fixed and severe in the epigastric region than elsewhere. The headache and abdominal pains declined about midnight on the occurrence of seven or eight large, thin, yellow evacuations from the bowels. The fever abated but did not go entirely off. Yesterday, at the usual hour, he had an exacerbation of fever, and a return of the abdominal pains without the headache, as on the night before the paroxysm declined on the occurrence of a profuse diarrhœa. Now (19th, 10 o'clock, A.M.) tongue natural; pulse 100, soft, and moderately full; skin moist; spleen very much enlarged, reaching an inch to the right of the umbilicus and to left iliac fossa. This he says has been so, or nearly as large, for ten years. *R.* Hydrarg. subm., gr. x; morph. sulph., gr. ss.—*M.* to be taken immediately; sinapism to abdomen. Evening.—His fever rose at the usual hour, but he suffered scarcely any from abdominal pains till about two hours ago, and they are much less severe than heretofore. *R.* Quin. sulph. ʒss; extract. taraxaci, grs. x.—*M.* fiant pilulæ x; two of them to be taken every second hour, commencing at 2 o'clock to-morrow morning.

Aug. 20th. Is comparatively comfortable; pulse 90; as usual the abdominal pains went off last night with diarrhœa. Evening.—Same; no pain to-day; repeat quinine to-night.

21st. At 9 o'clock last night he was taken with a violent pain in the ball of the right eye, which continued till midnight.

22d. Neither fever nor pain to-day.

Under the use of grs. xv of quinine three times a day, for about a week, his spleen diminished so much in size as scarcely to be felt.

CASE XIV.—*Tertian Remittent Fever, with Cerebral Congestion.* August 1st, 1844.—James English, a stout robust Irishman, who has resided in this country something less than a year, and has laboured in the field a good deal during the past summer, has complained for several days of headache, fulness and oppression about the epigastrium, nausea, and want of appetite. Occasionally, for a day or two back, he has been quite feverish. He has had at no time a well-marked chill, but has had occasionally, at irregular intervals, slight chilly sensations. This evening, at 4 o'clock, he was taken with high fever, quickly followed by complete coma. I saw him first at 9 o'clock at night. Pulse 120, full, but not hard; great heat of skin; face flushed and head very hot, and violent throbbing of the temporal and carotid arteries; breathing full and deep, and when he lays on his back, slightly stertorous; he cannot by any means be roused to take the least notice, or give an answer. I bled him to about twenty ounces, after which his pulse became quickened, smaller, and softer, but without any abatement in the stupor. With difficulty I got him to swallow a cathartic of calomel and compound extract of colocynth, softened and mixed with syrup; I likewise directed an enema to be given every hour or two through the night, till his bowels should be freely evacuated; cold applications to his head; warm pediluvia and sinapisms to his ankles, and left him for the night.

Aug. 2d. Although his bowels have been freely evacuated, the stupor remains undiminished; pulse the same; tongue dry and coated in the centre; pupils a good deal dilated, but readily affected by light; he makes no complaint, and gives no evidence whatever of pain; his evacuations were passed unconsciously. I bled him to ten ounces from the temporal artery, which had the effect of again quickening, temporarily, and rendering small and softer his pulse, without any perceptible effect on the stupor; I directed a blister to the back of his neck, and the enemata to be repeated occasionally through the day. Evening.—Pulse 116; slight diminution in the heat of skin; in other respects the same; he has had several evacuations from his bowels, passed unconsciously. As he had not urinated since the attack, I introduced a catheter and drew off a few ounces only of highly coloured urine; continue cold applications to the head; reapply sinapisms to extremities, and repeat warm pediluvia.

3d. He is awake, perfectly rational, and says he feels quite comfortable; tongue a little moist; pulse 100; slight headache; temperature of skin a little above the natural standard. From the time I saw him yesterday evening the febrile excitement gradually abated till about 6 o'clock this morning, when he awoke, as if from a deep sleep. Not doubting that if something effectual was not done to prevent it, a recurrence of the paroxysm would take place in the evening, I prescribed twenty-four grains of quinine to be divided into three portions, one to be taken every second hour. Evening.—He is now in precisely the same situation in which I found him on the evening of the first,—the exacerbation, instead of coming on in the evening at 4 o'clock, as I expected, anticipated it by several hours, and came on at 10 o'clock in the morning, the time he should have taken the second dose of quinine. There was then but a brief and imperfect remission in the fever, and an intermission in the stupor of only four hours. This exacerbation pursued precisely the same course as the preceding, with the difference only of an increase in the stertor.

On the evening of the 4th a slight diminution in the frequency of the pulse and temperature of the skin had taken place, and looking upon this as indicative of the approaching remission, which, however, might be very brief, I

determined to take advantage of it, and as it was now impossible to get him to swallow any thing, directed an enema, containing ʒss of quinine and ten drops of laudanum, to be given every second hour.

5th. Four of the enemata have been retained. He is awake, and much as he was on the morning of the 3d; his pulse, however, is only 90, and he complains of *tinnitus aurium*. Looking upon this as an indication that his system was under the influence of quinine, I felt perfectly easy about the case, but directed four grains of quinine every second hour. Evening.—Pulse 82; very little morbid heat of skin; tongue moist; scarcely any thirst. Continue quinine, four grains every third hour.

6th. Pulse 76; some appetite; no thirst. He received no further attention.

CASE XV.—October 13th, 1841, I visited — Stone, a negro girl, about 9 years old. She was, to all appearance, in a calm and gentle slumber; her pulse, and respiration, and temperature of the skin natural, that of the head and face being no greater than that of the other parts of her body; no increased action of the temporal or carotid arteries; pupils natural; tongue moist, and giving no indications of fever or gastric derangement. Her bowels, I learned, were in a good condition, the evacuations being perfectly natural. In short, there was no appearance of disease about her except the coma, and that might have been mistaken for a gentle and refreshing slumber but that she could not be roused from it. Loud noises, shaking her, the cold douche, and sinapisms, were all tried without effect. She lay perfectly relaxed, and made no effort to alter any position in which she might be placed.

She was first taken about 9 o'clock on the morning of the 11th, the paroxysm continuing till 2 o'clock in the morning of the 12th. A physician who had been sent for the night before saw her soon after the subsidence of the paroxysm, but as she was, to all appearance, in perfect health then, he made no prescription for her. At 9 o'clock on the 12th she again fell into the same condition, the paroxysm continuing as before till about 3 o'clock on the morning following, when a complete intermission again occurred, in which she appeared in perfect health. About 11 o'clock on the morning of the 13th, when I first saw her, she was in the third paroxysm, which, like the two preceding ones, had come on about 9 o'clock.

I ordered enemata, each to contain gr. v. of quinine, to be given every third hour till the occurrence of the intermission, which, with perfect confidence, I expected to come on as heretofore. During the intermission she was to take gr. iv. of quinine every third hour till she had taken three doses, and after that it was to be given in smaller doses, and at longer intervals.

I visited her again on the 14th, in the afternoon. I found no appearance of disease about her. Her pulse, under the influence of quinine, was a little below the natural standard, being only 68. On the previous day, during the time of the paroxysm, it was 80. She had no return of the coma.

Remarks.—The occurrence and regular periodical return of coma, during the progress of an attack of remittent fever, is by no means rare. But the form of disease above described, is, I am disposed to believe, of very rare occurrence. I have seen three cases of it, and one of my medical friends has spoken to me of one or two cases of it which have happened in his practice. It differs from the ordinary comatose remittent and intermittent fevers, in the absence

of all febrile excitement, general constitutional disturbance, and appearances of determination to the brain. The case is a curious one. There was nothing like inflammation of the brain, and except the coma, there was nothing whatever that could be taken in evidence of congestion. The functions of the brain were probably suspended by the noxious agent in a manner analogous to that by which local neuralgic affections are produced by it.

I have not, in the selection of the above cases, chosen those only in which the beneficial influence of the quinine has been most conspicuous; I have rather desired to exhibit, in a small space, as great a variety as possible in the character of the cases to which it is applicable. I could have given many others of the same kind, some of them, indeed, because fewer other remedies were given in conjunction with it, in them, exhibiting, if possible, still more unequivocally, its beneficial influence. That I do not attach undue importance to its agency, the progress and result of the cases prove, and that it is not a hobby very severely ridden is, I think, evident from the fact, that though freely used, and principally depended on, it has not, as a general rule, been to the exclusion of other remedies which seemed to me applicable to the cases.

As to the best time for administering the quinine, I generally, in cases where there is any thing like a distinct remission, prefer this period for its commencement, probably now, more from habit than any thing else, where the remissions are short, or when the case is urgent, and there is reason to apprehend a fatal termination in the next exacerbation. Or where the disease is of so violent a character as to justify fears of the occurrence of any serious organic lesion, or a considerable aggravation of any that may already exist, it seems to me preferable to commence with it immediately, and this I generally do without regard to the stage of the paroxysm. As to the doses, they should be efficient; but very large ones are generally unnecessary, and they are only advisable where a severe exacerbation is expected, and the time allowed you to guard against it is short. To an adult, in a case in which its continued administration, for a length of time, is advisable, for the purpose of subduing local inflammation, by its sedative influence over the heart and arteries, about forty-eight grains in the twenty-four hours will generally be found sufficient; and it is better to give it in doses of about eight grains every four hours, than to administer it in smaller doses at shorter intervals. The length of time for which it should be continued varies according to the character of the case. In remittent fevers, in which any local affection that may be present,—e. g., the congestion of the brain in comatose remittent fever,—subsides entirely during remission, its continuance merely for a sufficient length of time to prevent an exacerbation is all that is necessary, the progress towards recovery, however slow, being almost always certain from this point; where, however, there is inflammation present, the remedy should be continued till it is entirely subdued; as frequently, when any spark of inflammatory action remains unextinguished, as soon as the influence of the

quinine over the arterial system subsides, the inflammation is quickly rekindled, and its progress generally very rapid.

The system once fully under the influence of the remedy, under any circumstances, it seems to me better *gradually* to withdraw it. Even in severe cases of congestive fever, where great prostration, restlessness, and anxiety exist,—where the pulse is very frequent, small, and weak, and the extremities bathed in a cold and clammy perspiration, and where each dose of the *so called* stimulant augments, in a high degree, these very symptoms which it is administered to combat,—I think that I have seen bad results follow its *sudden* withdrawal. In consultation, in such cases, I advise its continuance, the doses to be gradually diminished, but combined with full doses of some *genuine* stimulant.

From these remarks I do not wish the inference to be drawn, that I look upon quinine as always injurious in congestive fever. On the contrary, I view it, even in this disease, when early administered, and with a proper knowledge of its real action, as the only remedy, so far as my experience goes, on which we can found any reasonable hope of cure. Under the use of other remedies I have sometimes seen cases *get well*, but it is only with this that I ever have any hopes of effecting a cure.

An attack of congestive fever is, like the mildest case of remittent fever, composed of a series of paroxysms, and these paroxysms of exacerbations and remissions, and like it, too, the progress is always one of improvement (except in the last fatal paroxysm) from the commencement of the decline of one exacerbation till the occurrence of the next. Prevent the occurrence of this exacerbation, and the progress towards amendment is continuous, till convalescence is established, in about the same ratio as during the decline of the previous exacerbation. It is sometimes, indeed, difficult to detect or distinguish the different stages of the paroxysms; for even in that moment in which the remission is most perfect, the patient's situation is sufficiently desperate.

From what I have said, it is apparent that I believe the beneficial influence of quinine, in such cases, to be excited by a property which it possesses, altogether distinct and different from its antiphlogistic or sedative action. I allude to its power of preventing the recurrence of the paroxysms of periodical diseases.

Its administration in congestive fever then, should be with the object solely of preventing an exacerbation, and thus allowing the efforts of nature to go on uninterrupted from the time of the decline of the previous paroxysm. With this object in view its administration can generally be conducted with safety, in the less severe cases, by giving no more than is necessary for this purpose, and then gradually withdrawing it; and in the more severe cases, where the prostration is extreme, by giving it in the same doses, with the same object only in view, in combination with some active stimulant to counteract its depressing influence. Thus, in the treatment of inflammatory

affections, its sedative or contra-stimulant properties are aided by combining it with antimonials, and a general antiphlogistic course, while in cases of a congestive character its mysterious powers, as an agent against the periodical recurrence of morbid action, may be brought into play, and its depressing influence measurably prevented by combining it with stimulants.

It is where it has been given as a stimulant that I have seen its baneful influence manifested, in cases of great debility; and it is astonishing with what perseverance it is sometimes administered, while each dose is speedily followed by an increase in the exhausting perspiration, prostration, and weakness and quickness of the pulse.

In the few cases of this character in which the extract, the tincture, or the infusion of the Peruvian bark can be retained on the stomach in sufficient doses, it is preferable, as being less directly sedative, and possessing all the power, as an anti-periodic, of the quinine. In no article in the *materia medica*, however, is there more difference between the action of the genuine article, and the sophisticated compound sold by many of our druggists instead, than in the Peruvian bark.

I have said that in *a very few cases* I have seen the quinine appear to act as a stimulant, and yet, in these instances, a further experience with the remedy has disposed me to think that the increased excitation following its administration, was attributable to other causes, perhaps only the natural progress of the disease. The action of the quinine may have been merely negative, as often happens in the administration of other remedies for diseases, in which, from the experience of ages, they have been sanctioned by the general voice of the profession. In cases of a highly inflammatory character, the doses of tartar emetic, which would be effectual in a less phlogistic state of the system, prove entirely nugatory. The patient who, in an ordinary attack of fever, would be excessively vomited by half a grain of tartar emetic, in a severe attack of pneumonia, will bear, sometimes even without nausea, from half a grain to a grain of the same remedy every hour, for several days in succession. May it not be so with the quinia, that, to procure its beneficial influence, the size of the dose must be augmented in proportion to the amount of inflammatory action and febrile excitement which it is intended to subdue or resist? I have seen many facts confirmatory of this.

The following case of bronchitis, verging into pneumonia, I have treated since writing the above. I append it as strongly and most unequivocally demonstrating the sedative or antiphlogistic powers of the quinia in a case in which there was scarcely a probability that the patient laboured under the influence of malaria.

CASE XVI.—December 25th, 1843, I visited — Northcott, a strong muscular man, about 45 years old. He is a citizen of the state of Tennessee, and of a part of it in which, he says, fever and ague, and bilious remittent fevers, are unknown. On the 22d of November he started from home with

a drove of hogs, and got wet and very much chilled by a heavy shower of rain the same day. Next morning he awoke with a troublesome cough, fever, difficulty of breathing, and some pain and a feeling of tightness in the chest. He continued to travel, however, with his drove, till about the 15th December, getting wet again several times during his journey, and each time "taking fresh cold." On the 15th he was compelled to lay up, but in two or three days, feeling a little better, he resumed his journey, and arrived in Montgomery on the 20th. On the 23d, contrary to his inclinations, he was forced to take his bed, and on the 25th I visited him. He is not much emaciated, and he states that to within the last eight or ten days his appetite has been pretty good. Of late he has been more feverish, and has had occasionally chilly sensations, at irregular periods, brought on generally by a draught of cold water, or by contact with the cold bed after changing the sheets, &c. These chilly sensations have always been followed by periods of increased febrile excitement of irregular duration, and these again by perspiration. His cough is severe, and comes on in violent paroxysms, accompanied by an opaque, viscid, yellowish expectoration, in considerable quantities. Over nearly the whole chest a loud scattered sonorous r le is heard during expiration, and to the same extent during inspiration, a sibilous r le is heard. Over a space as large as one's hand, below the right nipple, a rather coarse crepitating r le is heard, and over a still greater extent on the lower part of the right side. It is only from the fourth rib up to the clavicle on each side that the respiratory murmur can be heard at all distinctly through the sonorous and sibilous r les. He complains much of soreness and tightness around the chest, and also of headache; tongue rather dry, rough and white; skin hot; pulse 100, and moderately full and sharp; respirations 30; face flushed and livid; bowels costive; catches at imaginary objects during his sleep; owing to the severity of his cough, he has for some time rested badly, more especially for the last three or four nights; he is quite thirsty. R. Ant. potass. tart., gr. ii; Tr. opii, gtt. xxiv; mucilage acaci ,  iv.—M.; a tablespoonful to be taken every second hour; and R. Calomel, pulv. ipecac. c.    gr. v.—M.; to be taken at bed-time.

26th. His situation remains much the same; pulse 100; respirations 28; skin hot; he has had one thin bilious evacuation. Continue the antimonial mixture. Evening.—Same. Continue same.

27th. Still as he was. R. Ant. potass. tart., gr. iv; Tr. opii,  ss; mucilage acac.,  iv.—M.; a tablespoonful every third hour. Under a continuation of the same treatment his symptoms continued unabated up to the evening of the 28th, with this difference only, that he had got rid of the chilly sensations, and the consequent febrile paroxysms, the fever being continuous; yet judging from his own sensations he thought himself decidedly worse. At 7 o'clock in the evening I gave him, as an experiment, ten grains of quinine. At 10 o'clock I returned, and found a very appreciable improvement in him. His pulse 94; respiration 26, and his skin a little moist. R. Quin. sulph., gr. xxiv; mass  hydrarg., gr. viii.—M.; fiant pilul  viii; two of them to be taken every second hour.

29th. Pulse 86; respirations 26; skin and tongue moist; no thirst; cough less frequent; tinnitus aurium. Continue pills. Evening.—Pulse 78; respirations 26. Continue pills.

30th. Through forgetfulness the pills were not procured for him last night. The tinnitus aurium has abated; pulse 86; respirations 28; cough more troublesome; skin dry. R. Quini  sulph., gr. iv; antim. potass. tart., gr. i;

massæ hydrarg., gr. viii.—M. ft. massa in pilulas viii dividenda; two of them every third hour. Evening.—Pulse 76; respirations 26; skin moist.

31st. Pulse and respirations the same; coughs but little, and with scarcely any expectoration. The sibilant râle is only heard occasionally at distant points; the sonorous râle continues to be heard extensively; the crepitating râle is heard over a small spot below the nipple. Continue pills.

January 1st. Pulse 72; respirations the same; skin and tongue moist; cough and expectoration both diminished, and the small quantities of matter expectorated is a thin transparent mucus resembling that of the first stage of bronchitis. Continue pills.

2d. Pulse 70; respiration and other symptoms the same. Continue pills.

3d. Pulse 68, soft; skin and tongue moist; no thirst; scarcely any cough; no morbid sound in chest. Continue pills.

4th. Pulse 64; respirations 24; some appetite; gums a little sore. He continued to take the quinine, gr. viii, three times a day for a short time.

On the 7th he was able to sit up part of his time; he continued to improve, and recovered his strength rapidly.

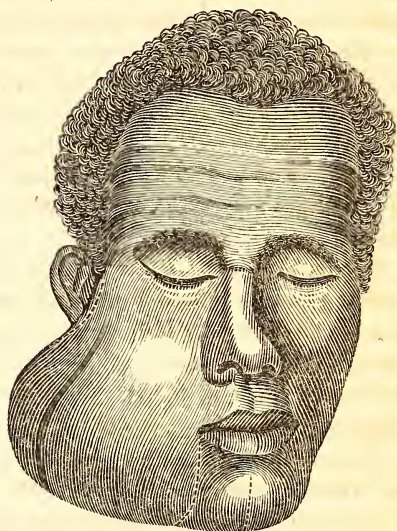
Remarks.—If the above case was really, as I have supposed, one in which malaria had no agency, its addition renders my heading somewhat inappropriate, and goes far to upset an opinion which I once entertained and hinted at in the commencement of this paper,—viz., that it was only on patients labouring under the poisonous influence of malaria that the sedative action of the quinia was exerted. This implies a belief in some peculiar modification of the system by the malaria, altering its susceptibility to the action of remedies, or in the possession of the quinia of a power, as a counter-poison to the malaria. Supposing the latter to be the case, the malaria, once decomposed or neutralized by the quinine, the derangement of the system produced by its action, provided it does not extend to disorganization, subsides as a necessary consequence. However, to return,—the above case, I say, goes far to controvert such an opinion, and to establish the correctness of the proposition, that under any circumstances the quinine may be made to act as a sedative by merely proportioning the dose to the degree of inflammatory action going on in the system at the time.

The *peculiar* applicability of the quinine to the treatment of the inflammatory affections of malarious districts, is owing to the combination, with its antiphlogistic properties, of a power as an agent in controlling the periodicity of morbid action. As an antiphlogistic remedy in elevated and healthy localities, it will probably never supersede the lancet, antimonials, &c., though it may, in many cases, be brought to their aid; but in malarious regions, ere long, it will generally be looked upon as the safest and most manageable contra-stimulant we possess, and at the same time one sufficiently powerful, while other agents of the same class will only be used to fulfil some casual indication, or as adjuvants to this, the principal remedy.

ART. VI.—*Case of Osteo-sarcoma of the Lower Jaw—Excision—Cure.*

By JOSEPH P. JERVEY, M. D., of Charleston, S. C. [With a wood-cut.]

IN November, 1842, Mr. M. called upon me to request an examination of his servant George's face. There was no hesitation in pronouncing the case to be one of osteo-sarcoma of the inferior jaw on the right side; the tumour was, at that time, not larger than a common hen's egg. I advised an immediate operation for the removal of the diseased portion of the jaw, but in consequence of the unwillingness of the patient to suffer the pain, his master very properly yielded to his repugnance. In December, 1843, Mr. M. again called and stated that George was anxious to be operated upon in consequence of the great pain he had lately suffered, from having accidentally received a blow upon the tumour, which had increased, during the interval, to at least double its former size, extending upwards and in front so far as to force the cartilaginous portion of the nose out of the straight line, and curve it over towards the left side of the face. He was accordingly brought to town, and on the 4th January, 1844, I proceeded to operate, assisted by several of my professional friends, in the presence of the class then attending the lectures in the Medical College of the State of South Carolina.



I commenced by making a free incision from the angle of the mouth on the right side directly down to the inferior border of the lower jaw, thence along the edge of the bone to a little above, and in front of the meatus auditorius externus. Having carefully dissected up the whole of the right cheek, which by the way, was the most tedious portion of the operation, the exceeding vascularity of the tumour rendering it necessary to tie some vessel at almost every stroke of the knife, I divided the bone at the chin, and again above the angle of the jaw, removing the portion between these points with which the tumour was connected.

The patient was on the table rather less than three quarters of an hour, by far the greater portion of which time, however, had been expended upon the

bleeding vessels peculiar to the tumour. There was great prostration from loss of blood, and very slight reaction when dressed about three hours after the operation. In dressing the patient I made use of a silver plate, which had been carefully moulded so as to form an exact receptacle for the teeth of the upper and lower jaw of the left side, leaving a small space between the jaws through which food, &c. might be introduced. This plate has been of very great service, as the lower jaw is now in its natural position, instead of being sunken and drawn to one side, which must have occurred without this support.

January 5th. Took brandy freely during the night, and with the assistance of opium passed a comparatively comfortable time. Reaction pretty well established.

Continued to improve until the 7th, when he complained of some uneasiness in the throat, and of having had a sleepless night.

8th. Difficulty of swallowing much increased, and great complaint made of pain in the throat. Upon removing the dressings (for the first time) the wound was found to be disposed to heal throughout its whole extent, and the interior of the mouth was suppurating, and of a healthy appearance.

On the 10th removed the pin from the angle of the mouth, and the stitches from the wound, which looked well. Great complaint of the throat still, and difficulty in swallowing.

No material change occurred until the 14th, when, upon visiting my patient, I was surprised to find a great improvement in his speech; he expressed himself as, "feeling like a new man." Upon examination I discovered that an abscess had opened in the throat during the preceding night, and had discharged freely, and he was immediately relieved from all pain and difficulty of swallowing.

Complained on the 20th of great pain in the legs, which was followed on the 21st by a dropsical swelling of the legs and feet, extending on the 22d to the trunk, the belly being much distended. The dropsical swelling continued variable until the 1st February, when the patient was carried to his master's plantation, in the neighbourhood of the city, with directions to continue the same remedial course which had been employed during his stay in the city.

On the 16th February I visited George, and saw a very marked improvement in every respect.

I again saw him on the 9th March, and found that he had voluntarily gone to work. The swelling on the right side of the face has almost entirely disappeared, and upon examining the mouth I traced a deposit, sufficiently firm to resist the pressure of the finger, uniting the divided ends of the jaw bone, and filling the space formerly occupied by the bone.

ART. VII.—*Case of Craniotomy.* By CHARLES C. HILDRETH, M. D., of Zanesville, Ohio.

Mrs. D. C., residing four and a half miles from Zanesville, was referred to me by Dr. S., who had been several days in attendance, but whose other engagements compelled him to decline the case.

Jan. 31st, 1841. Found Mrs. C. in tolerably active labour with her first child. She informs me that she has suffered almost constant pain for a *week past*, and that during that time Dr. S. had been in attendance *three nights* and part of *two days*. Making the usual vaginal examination, I found the membranes ruptured, the os uteri dilated to the size of a half dollar, and the posterior fontanelle to the right acetabulum. The conjugate diameter of the pelvis somewhat contracted. There being unusual rigidity of the external soft parts, os uteri, and the pulse justifying the measure, I bled her to approaching syncope; relaxation followed, and dilatation of the os uteri progressed more rapidly. At 10 P. M. the vertex became fairly engaged in the upper strait.

For the next three hours the labour made no progress, and the pains became inefficient. The os uteri being now sufficiently dilated, and the soft parts relaxed, at 1 A. M., Feb. 1, I gave the ergot. Under its influence the uterus contracted much more energetically, and some little progress was made. The head was forced fairly into the upper strait, but could not be made to engage in the lower. The ergot was repeated after the effect from the first dose was lost, but with the result only of wedging the head more firmly against the pubis and promontory of the sacrum. Its influence, in fact, was soon lost entirely, from diminished nervous energy of the uterus, the result of its long-continued action.

Finding the child could not be born by the natural efforts, nor by the use of ergot, I sent to Zanesville, about 4 A. M., for the long forceps. After their arrival, and the usual preparations, an attempt was made at their introduction. In the *left* side of the pelvis there was no difficulty found in introducing one blade of the forceps, and adjusting it to the child's head in the proper direction; but under the arch and ramus of the pubis of the *right* side I found the head *impacted* so firmly, that by no prudent effort could I get the blade in apposition with the head so that I could lock the instrument. Withdrawing the forceps I introduced the vectis, and co-operating with the expulsive efforts of the patient endeavoured to enlarge the space under the pubis, but in vain. Examining carefully the condition of my patient, I found her much exhausted; pulse 140; uterine action nearly suspended; strength failing; symptoms of impacted head manifest; vagina and labia swollen and irritable. Becoming alarmed for her safety, I requested a consultation, and named Dr. S., as he had been previously in attendance.

The consulting physician was requested to bring other forceps and instru-

ments for opening the head. Gave the patient brandy and nourishment, and allowed her to rest quietly until the arrival of Dr. S., at 7 A. M. The Dr. brought short forceps *only*, having no embryotomic instruments. After giving the patient half a grain of morphine and more brandy, an attempt was made by Dr. S. and myself to adjust the short forceps, but unsuccessfully. The head upon the right side of the pelvis was too firmly impacted to suffer the blade to be placed in apposition with it. After several ineffectual efforts to deliver by the forceps (Dr. S. agreeing with me in the absolute necessity of craniotomy to save the life of our patient), the proper instruments were obtained as soon as possible, the head opened, the brain evacuated, the cranial bones removed, and by the assistance of the crotchet and the efforts of the patient, the child was delivered without any unusual difficulty. From the desquamation of cuticle, and other evidences of decomposition, we perceived that the child had been *some time dead*. After the removal of the placenta the uterus contracted well under the use of the bandage.

The tongue indicating some bilious derangement, we prescribed small doses of cal. and senna every four hours. Pills of opium and camphor, two grains each, were directed whenever required by the *pain* or *exhaustion*, and brandy also, if necessary, with her nourishment.

We took leave of our patient about 12 o'clock, with much apprehension of peritoneal or uterine inflammation, and extensive sloughing of the vagina from the long-continued and excessive pressure it had sustained.

Feb. 2d. Found my patient had been purged excessively by the calomel, notwithstanding the liberal exhibition of opium; perspiring moderately; pulse 125; thirst urgent; tongue dry; no after pains; abdomen very tender on pressure, but not swollen; lochial discharge natural; urine passed with pain. Directed the pills of opium and camphor, two grains each, every two hours, until the purging ceased; brandy, if required by exhaustion; mild nourishment; a vegetable diuretic infusion for drink; directed also frequent ablutions of the vagina with a solution of chloride of soda and warm water, thrown up with the female syringe; fomentations to the hypogastric region of hops, flannel, and hot water; perfect rest and quietude.

3d. Found my patient rather more comfortable; purging still continues; five or six evacuations in the last twenty-four hours. The opium had been taken every two hours as directed, is well borne, sustaining the pulse, and supporting the exhausted energies of the system more perfectly than could have been expected from any other agent. Pulse more developed, 120; no fever; still perspiring moderately; the warm vaginal injections somewhat relieve the difficulty of passing water. Continue treatment; pills of opium and camphor every three hours as long as demanded by the purging, pain, &c.

4th. Purging nearly ceased; vagina and labia much swollen, and very tender to the touch; soreness of hypogastrium diminishing; pulse 120; no fever; no milk; feels rather stronger; tongue cleaning off and becoming moist; secretions from the bowels healthy. Directed the opium to be given

as indicated; spts. nitr. dul. and camphor with the diuretic infusion for the relief of strangury.

5th. Last evening had a chill, but no fever; some slight appearance of milk. Informs me that she felt distinctly last night something give way in the vagina, at which time also she fainted. Since that time she has had *two* discharges from the vagina, of matter distinctly *feculent*, and in considerable quantity, thus establishing beyond a doubt a slough of the recto-vaginal septum. Directed the parts to be kept clean by frequent injections containing the chloride of soda. Discharge from vagina becoming pale, purulent, and offensive. Strength well sustained by nourishment alone.

6th. No further discharge of fæces from vagina or rectum; symptoms nearly the same; no fever; very little milk; another chill last night. Continue treatment.

7th. Complains much of strangury; says she has passed but very little water for twelve hours. Introduced the catheter; removed but half a pint of highly coloured urine. Nothing more has passed vagina or rectum; milk rather more abundant.

10th. Lacteal secretion suspended; perspiring too much. Directed the whole surface to be rubbed with hot alum and brandy twice daily. No evacuation from bowels for four days. Directed castor oil and enemata.

19th. Patient still very feeble; no fever; no milk; says she has seen nothing more like fæces pass vagina; still troubled with strangury; made a vaginal examination. Os uteri very tender to the touch, the organ, however, not larger than natural; can detect no trace of fistula in the recto-vaginal septum, the whole surface, however, very tender to the touch, and irritable. Directed weak injections of sugar of lead and laudanum; hot poultices to hypogastrium; horizontal posture.

From this time my patient continued gradually to improve. She was kept in the horizontal posture for several weeks, and now, Jan. 2, 1844, although in the enjoyment of *tolerable* health *she is still not well*.

The uterus has since laboured under inflammatory symptoms of a sub-acute character, as indicated by dysmenorrhœa, occasional pains in the back and loins, tenderness on pressure, &c. For this condition she has taken iodine, the dento-iodide of mercury, and hydriod. potass, Donovan's mixture, &c. &c., but without any very apparent benefit. I have frequently urged upon her the use of leeches to the os uteri, but could never obtain her consent to their application. She has never since *conceived*, nor until the uterus can be restored to its healthy functions can such a result be anticipated. Before taking leave of this case I cannot avoid referring to one or two points connected with it, to me, at least, of great practical interest and value.

And in the first place, we observe the strong reliance we should justly place upon the "*vis medicatrix nature*" under circumstances the most unpromising. That a slough between the rectum and vagina occurred in this case on the fourth day after delivery I have not a doubt. That a fistulous opening

would follow I certainly expected, and had determined, at the proper time, to attempt its reparation. In this, however, I was most agreeably deceived. Under the simple agency of rest, quietude, cleanliness of the parts, &c., *nature* did for my patient what too often the most skilful surgeon fails to accomplish, and relieved her at once of one of the most loathsome diseases to which human nature is liable. Another point of much interest in connection with this case is, the exceeding great value of opium in controlling inflammation of the uterus and its serous investment. The patient, it will be remembered, was kept completely under its influence for several days after delivery; *twenty-four* grains were taken on the second day; perhaps sixteen on the third, and yet the bowels were not constipated by it, five or six evacuations passing daily until the fourth day.

The opium was borne *remarkably well* in this case, and to it I attribute my patient's preservation of life. It sustained the pulse, adding fulness and volume to it, at the same time diminishing its frequency. It allayed all pain, and by its calming and soothing influence upon the nervous and arterial systems, kept down that strong tendency to inflammation which would naturally follow those grave lesions of structure and serious disturbance of function my patient had suffered. The following observation of Blundell was beautifully verified in her case,—That in cases of extreme exhaustion from loss of blood, protracted labour, and great impairment of nervous energy, the patient, when placed under the decided influence of opium, continues “to exist upon very small expenditures of the vital fluid.” While the patient sleeps and dreams away her existence, the brain and nervous system, under the sustaining influence of the opium, gradually but securely recover from the shock they have sustained. In inflammation of many of the *serous* tissues, if we can *allay pain* by opium in large doses, we have gained a strong point towards the removal of disease. This is exemplified in pleurisy; here a large bleeding and a full dose of opium will often at once cut short the disease if given before effusion occurs.

But to inflammation of the *peritoneum* is the remark more particularly applicable; here opium is *one* of our best remedies. Drs. Graves and Stokes (than whom I know no better physicians) inform us that they sometimes saved their patients by large and continued doses of opium, even after perforation of the peritoneum from ulceration of the bowels. Cases are on record where life has been saved by the *same means*, and after rupture of the uterus, and escape of the child into the peritoneal cavity. But these of course are extreme cases. Again, many of the best modern surgeons rely upon opium in a great measure, in controlling inflammation of the peritoneum, which follows the extirpation of *ovarian tumours* or the *Cæsarian section*. In inflammations of the peritoneum, occurring or supervening in states of *great exhaustion*, and where the more *active* remedies are *inadmissible*, is the opium practice found of the greatest value. Should, however, the *brain* be implicated, as a *general rule*, the use of opium must be abandoned.

ZANESVILLE, O., April 6, 1844.

R E V I E W .

ART. VIII.—*Traité Clinique et Pratique des Maladies des Enfants*; par MM. RILLIET et BARTHEZ, Docteurs en Médecine, anciens internes lauréats de l'Hôpital des Enfants Malades de Paris, &c. &c. Tomes III. pp. 2375, 8vo. Paris, 1843.

Clinical and Practical Treatise on the Diseases of Children. By MM. RILLIET and BARTHEZ, &c.

THE attention of recent observers in Europe, as well as in this country, has been strongly directed to the study of the peculiar modifications of disease which have at all times been observed during childhood, and a large amount of facts has been collected, both from their own investigations, and from the writings of earlier authors, which has been communicated to the profession in several complete treatises on the pathology of childhood. In France, however, no general work upon this subject had appeared to sum up the knowledge scattered through special dissertations, and in the pages of medical journals, when MM. Rilliet and Barthez, in 1837, conceived the plan of endeavouring to fill up this chasm in medical literature, by publishing a series of monographs upon the principal diseases of childhood, and especially of that period “which extends from the end of the first year to puberty.”

They enjoyed the most favourable opportunities for the collection of valuable materials, in their position as *internes*, or resident physicians of the *Hôpital des Enfants Malades* of Paris, and devoted their whole time and attention for several years, to the careful investigation of every circumstance connected with the cases which passed under their inspection, and which would throw light upon their pursuits. In 1838, their first monograph, on Pneumonia, was published in the *Archives Générales de Médecine*, and has been followed from time to time by other valuable ones; they were fortunately enabled subsequently to enlarge the sphere of their labours, in consequence of one of them being continued for two years longer in the hospital, after having sustained a brilliant and successful *concours*, and were thereby induced to undertake the preparation of the work which lies before us, in the prosecution of which task, they acknowledge their indebtedness to the kindness of the physicians under whom they served, for great facilities in conducting investigations, and to several former colleagues, for interesting cases.

The authors tell us in the Preface, from which the above narrative is derived, that their chief aim is “to facilitate the study of the diseases of children, a subject full of difficulty, and to furnish a useful guide to the physician at the bedside of the sick.” They also desire to contribute their proportion of useful materials to the history of pathology, by reporting with circumstantial detail the facts relative to the pathology of childhood, exclusively; facts, which are the results of their own personal observation, and for the accuracy of which they can therefore vouch. In

pursuance of this design, every case which appeared in the wards under their charge, during a period of several years, and at all seasons, was carefully studied, every particular in each, however minute or apparently unimportant, was scrupulously noted, and no pains were spared in preparing them for ultimate analysis. Laborious as was the task of collecting materials for the work, it did not exceed in difficulty, nor require less patient perseverance than that of reducing them to order, and arranging them in such a manner as to present to the reader the results to which they led. The plan adopted for this purpose, after rejecting many of their earlier cases as being incomplete, was that which had been so successfully employed by M. Louis, consisting in a statement of the number of cases under examination, and in a complete analysis of them, in tables, under every possible aspect. Had these tables been published in full, the authors feared that they would have justly incurred the charge of being unnecessarily prolix; they have, therefore, been content to give the results of these analyses and "succinct extracts from cases which had been collected in detail," when they were of sufficient interest, or were required for illustration.

They have also compared with their own, the recorded observations of the principal writers of England, Germany, and France, and have thus been enabled to give a complete account of the history of these diseases, which, from the manner in which it is presented, possesses all the attractions of novelty and originality, confirming in most cases the opinions of previous writers, at the same time that it opens up new views and considerations relative to the diseases of children. Such, then, is the plan upon which the authors proceeded in collecting and preparing their materials. The manner in which they were finally arranged, and the conclusions that have been deduced from them, we are now to examine.

In the introductory chapter MM. Rilliet and Barthez recognize the propriety of establishing periods in the duration of childhood, in the full belief that the diseases of that time of life are impressed with peculiar characters, according with the physiological development of the child, and they consider the age of the child as affording a proper distinction, as the usual division founded upon dentition, could not well apply to children who had all passed the age of 15 months. "The age of 6 years seems to form a sufficiently marked separation, for diseases often present a different aspect before, and after that epoch." Secondary divisions are laid down in each of these groups, children of from 15 months to 3 years, being distinguished from those between 3 and 6 years; whilst those between 6 and 10 years are sometimes noticed apart from those between 11 and 15 years, this last period forming the transition from childhood to puberty.

The general consideration of the diseases of children reveals the fact that they are but rarely simple, and that the same affection presents a very different aspect, when it occurs during good health, or in the course of some other disease. The authors also state, that

"Diseases of the same nature have the greatest affinity for each other, mutually and habitually engendering each other, provided they do not arise from the same cause; in which case the secondary affection may cure the primitive one; whilst those of an opposite nature generally repel each other, provided they do not recognize the same cause, or provided the first does not act as a local stimulus to the second. Hence, it is less important to study the seat than the nature

of the disease, when we compare the primitive with the secondary, and look for the laws of their concatenation."

These diseases are also acute, chronic, or cachectic, the last developing themselves in children, either constitutionally feeble, or becoming so in consequence of a succession of morbid conditions.

As a basis for classification, the nature of the disease, though not free from objections, of which the authors were fully aware, appeared more applicable in this case, because it enabled them to group together the facts they have collected in a manner, which was, at least, as judicious as any other. The classification of Pinel was, therefore, adopted in the volumes before us, after having been modified by the results of more recent investigations, and, especially by more accurate knowledge of the anatomical, pathological, and therapeutic affinities of disease. Thus we have 1st, Phlegmasiæ; 2d, Dropsies; 3d, Hæmorrhages; 4th, Gangrenes; 5th, Neuroses; 6th, Continued Fevers; 7th, Tuberculization; 8th, Entozoa, which last was added by MM. R. and B. These are placed in such an order as that those which are habitually secondary may be first described, this arrangement being deemed most advantageous for the study of each disease. In these divisions or classes, many forms of diseases to which children are liable, are evidently unnoticed; they are, however, either included under some of these heads, to which they bear the closest affinity, as congestion, hypertrophy and softening, under that of phlegmasiæ, or they are passed over entirely, as belonging rather to the domain of surgery, as cancer, "which, by the way, is a very rare affection in children," rachitis, and the surgical affections proper.

Secondary divisions, founded upon a local lesion, or local symptoms, are established in these 8 classes. "Thus in each of them, we study the diseases, 1st, of the chest; 2d, of the nasal fossæ, of the mouth, and of the neck; 3d, of the abdomen; 4th, of the encephalon and spinal marrow; 5th, of the external organs, as the skin, the articulations, the genital organs, the ears, &c. The diseases of each organ will be the subject of a chapter in each of these sections." A full and careful exposition of the pathological anatomy, of the symptoms, of the diagnosis, of the complications, of the prognosis, of the causes, of the treatment and of the history or bibliography of each disease is laid before the reader, and occasional remarks are added concerning its nature and its *physiologie pathologique*, when necessary for the purpose of elucidation or for the justification of opinions advanced.

It should be remarked, besides, that, while MM. Rilliet and Barthez have neglected nothing of importance in reference to any of the above particulars, so as to make complete monographs of their description of each disease, they have devoted especial attention to symptomatology and therapeutics, regarding the former as the "foundation-stone of diagnosis," and as the only true means by which, with an accurate knowledge of pathology, we can hope to lay down the proper indications for the treatment of disease. They have endeavoured to establish useful and detailed therapeutic rules, derived from their own experience and from a careful study of the writings of others, and especially of the Germans. The indications for treatment are well presented; the modes of action, and the advantages to be expected from the use of each remedy proposed to meet these indications, are separately examined; and in a concluding paragraph to the account of each disease, there is a "brief recapitulation of the different phenomena which may

be presented by children labouring under the same affection, and an indication in the form of a simple prescription, of the treatment which appears best adapted to each form and period of the disease;" a mode of proceeding which cannot but be regarded as highly commendable, and as adding greatly to the practical value of this work.

We have thus placed before the reader an outline of this treatise, as it is sketched in the introductory chapter, and we will now proceed to examine, or rather to give an account of, the different subjects embraced within its pages, recalling, however, first to the reader, that *infants*, properly so called, are not included among the patients admitted to the *Hopital des Enfants Malades*, and are, therefore, not referred to in these volumes. It is due to the authors to bear this fact in mind, for it will enable us to account for statements which might otherwise appear contrary to generally received opinions, but which will, in fact, be found to be perfectly correct when examined with this restriction.

Our attention is directed in the first place to that important class, the phlegmasiæ, under which title, as before stated, are placed both for convenience, and with evident propriety, hyperæmia, softening and hypertrophy. A preliminary chapter introduces the subject of inflammation, summing up in an admirable manner all that is known relative to the organs it attacks, the peculiar forms it at times assumes, the symptoms by which it is revealed, and the treatment requisite to moderate its action and to effect a cure.

The peculiarities of the phlegmasiæ in children, as noticed by MM. R. and B. consist rather in a greater or less liability to certain anatomical and symptomatic forms, than in a dissimilarity of nature from those met with at a late period of life. It is also noticed that "their symptomatic and often their anatomical form, their seat and their distribution are modified by the condition giving rise to them;" indicating an important principle in their treatment; for, "if the lesion of the organ is taken as the sole guide, and the disease is attacked by the same remedy," whether the form be a primitive acute attack occurring during health, or either primitive or consecutive in a weakened cachectic constitution, "you exasperate it in the one case, and you relieve it in the other. The curative medication of inflammation in children, must be directed rather according to the symptoms, than by pathological anatomy, which should take the second place in our consideration." Vol. i. p. 10.

One of the most important facts to be noticed in the inflammatory attacks of children, is,

"That they rarely remain isolated, succeeding each other with the greatest facility, or marching simultaneously, the one aggravating rather than curing the other. * * * An inflammation existing in an organ may disappear, remain stationary, or increase under the influence of an inflammation developed in a more important organ; but the disappearance of the first inflammation is the exception to the rule, at the same time that the general condition is always rendered worse. * * * If on the other hand, an organ less essential to life is inflamed, and the same process is developed in another organ of less, or nearly equal importance, we are firmly convinced, that the first inflammation will never or almost never be diminished, sometimes it will increase, and the second inflammation will only prove an additional cause of death."

The danger of using blisters, or even sinapisms, or any cutaneous revulsives in inflammation in children, follows as a corollary to this proposition, the authors conceiving that they only cause additional pain and

an excitement often useless for the relief of the internal affection, which will follow its fatal course, and may even be aggravated by this new inflammation. We shall have occasion to advert to these opinions hereafter.

A marked distinction is to be observed between those inflammations occurring in the course of previous good health, and those coming on in the midst of some other affection; each of these forms, again, may be acute, chronic, or cachectic, giving rise to the following divisions, under which inflammations are here studied.

Primitive phlegmasiæ with an acute type;

Consecutive phlegmasiæ with an acute type;

Primitive phlegmasiæ with a chronic or cachectic type; and

Consecutive phlegmasiæ with a chronic or cachectic type.

Before leaving these general considerations, we would direct attention to two interesting particulars, mentioned by our authors. One is, that, as far their observation extends, and it is we believe in accordance with sound pathology, "Inflammation of the parenchymata rarely, we would willingly say never, leaves atrophy as a result, having met with no example of it; hypertrophy, on the other hand, is, if not a frequent, at least, a possible consequence of it." Vol. i. p. 8. The other, and it is a fact to which we find constant allusion in the pages of these volumes, is, "that the age, the sex, and the constitution of the child establish a great difference in the predisposition to certain kinds and certain forms of inflammation; thus, the youngest and most delicate children and girls are more subject to the chronic and cachectic forms, than older and more sanguine children and boys." Vol. i. p. 13.

Among the inflammatory affections which occupy the first section, those of the chest are first presented to the reader's notice. Prominent among these, both on account of its frequency, and the different forms it assumes, stands bronchitis, a disease long confounded with pneumonia, and only recently studied apart from it. The principal facts upon which the chapter on bronchitis is founded, were originally published by the authors in their monograph on pneumonia, which was designed to give a complete history of that affection, in all its relations with other diseases of the lungs; since then, many additional and important observations have been collected, and a valuable stock of new and interesting matter has been placed within their reach in the thesis of M. Fauvel on Capillary and Pseudo-Membranous Bronchitis, which has corroborated their views and conclusions. These, however, have long been before the public, and, having been found to coincide with those of other accurate observers, have been adopted in almost every standard work which has since been published; we will therefore only point out a few of them.

MM. Rilliet and Barthez state, that you rarely meet with the anatomical characters of acute bronchitis in a child under five years of age, without at the same time finding traces of pneumonia, this being sometimes a secondary disease, at others primitive or concomitant. Connected with this, we are told that the value of the sub-crepitant rhonchus, as a diagnostic sign of bronchitis, differs with the age of the child in whom it is met with: thus if it is under five years, and the sound is heard either on one or both sides of the chest, there is danger of pneumonia existing as a complication of the acute bronchial inflammation, whilst after the age of five years, there is less probability of this being the case, though even here, from the tendency to the occurrence of lobular pneumonia, its presence may be sus-

pected. Where the crepitant rhonchus is heard, the authors have invariably, with one exception, met with portions of the lung affected with pneumonia. The local and general symptoms together, can alone afford a measure of the gravity of the disease. This, when the affection is primitive, is comparatively slight; but, from the facility with which the inflammation extends to the whole of the bronchial tubes even to the minutest ramifications, and with which it becomes complicated with pneumonia, it is always to be carefully watched and requires prompt treatment. When from the outset, the whole of these tubes are inflamed, the disease invading the smallest bronchi, constituting what is called the capillary form, accompanied with high fever, acceleration of the respiration and great dyspnoea, with a copious purulent and pseudo-membranous secretion, it is at all ages a serious disease; indeed, all the authors' patients and those of M. Fauvel, which were thus attacked, died; and we are elsewhere told that "the great majority of those who died of bronchitis presented muco-purulent and pseudo-membranous secretions in the bronchi, especially in those of the lower lobe." In these severe cases, the employment of moderate bleedings, and emetics, and, especially, the antimonial preparations, with diffusible stimulants and cutaneous revulsives in the latter stages, is recommended to be adopted; in the milder forms, however, it will be only necessary to keep the children in bed, giving them mucilaginous drinks and slight antimonials, sedatives when the cough is troublesome, and emetics when the collection of mucus in the lungs is very great.

The conviction that most of the readers of modern medical literature must be already familiar with the valuable researches of the authors on the subject of pneumonia in children, both from the able memoir to which we have already several times alluded, and from the excellent work of M. Grisolle on pneumonia,* into which it has been incorporated almost entire, induces us to attempt merely to recall some of the results of their investigation, and to state that their subsequent inquiries have only tended to confirm their conclusions.

It has been asserted that bronchitis always precedes pneumonia in children, especially the younger ones; nor can it be denied that such is often the case, and that in a great majority of instances inflammation of the bronchi is found to occupy the smaller ramifications, co-existing with the lobular form, which is so much more frequent than the lobar at this period of life. The authors, however, believe that this bronchitis should be looked upon rather as a predisposing cause to the inflammation of the parenchyma of the lungs, than as an active occasional cause, and they state the results of their later researches upon this subject, as follows.

"We admit, 1st, that lobar pneumonia, without bronchitis, in children under five years of age, occurs more frequently than was supposed in 1838; 2d, that lobular broncho-pneumonia is much more frequent than simple lobular pneumonia; 3d, that it is nevertheless incontestable, that lobular pneumonia, mamillated, partial or generalized, may exist in children without bronchitis; and 4th, that inflammation of the bronchi and of the lungs is, in some cases, simultaneous." Vol. i. p. 114.

Lobular pneumonia is not only more frequent, but it is more serious than the lobar form. It occurs either in isolated separate lobules, or with a tendency to extend from these and generalize itself over the lungs, thus presenting a very grave form of disease. In the immense

* Reviewed in the No. of this Journal for July, 1843.

majority of cases it is double; indeed, of 203 cases, it was single in only five instances, and in these it was of little importance. The exceptions were cases in which carnification,—itself, in fact, a form of pneumonia,—existed in the opposite side, or in which the inflammation was developed around a tubercular deposit, or as the authors met with it sometimes, after scarlatina and variola, in which hepatized lobules—in fact rather resembling apoplectic nuclei—were found on one side only. This lobular form not rarely reaches the third degree, terminating in the formation of abscesses, varying from the size of a pin's head to that of a pea. These are sometimes met with in the lobar form, but very rarely, and are then larger. Lobar pneumonia is generally single, most frequently developed on the right side, and at the base of the lungs. In one-third of the authors' cases they observed it in the upper lobe. In reference to this point, a curious statement is made by MM. R. and B.; they say, “that almost all the children (affected with pneumonia) which entered the hospital in April, May, and June, 1840, were attacked with pneumonia of the summit, presenting, as it were, a sort of epidemic of this form, which is generally rare.” We find repeated here a fact relative to diagnosis of pneumonia of the summit, which was first announced by the authors in their memoir in 1838, and which they assure us is confirmed by their subsequent observations. It is that inequality in the respiration, and especially an abrupt broken rhythm, (*rhythme saccadé*,) indicates almost exclusively this form of the disease, and that the attack sometimes commences with violent and repeated convulsions, often followed by loss of consciousness, which disappears after a time leaving a considerable acceleration of the pulse and of the respiration, leading to a suspicion of a pulmonary affection, which may be detected by other and more certain signs. This convulsive commencement of the attack is almost exclusively met with in this form of pulmonary inflammation.

That condition of the lung which has received the name of carnification from M. Ruz, and which presents the appearance of the lung of a fœtus which has never breathed, is considered by the authors to be a termination of pneumonia, or, as it were, a chronic form of it, it being sometimes possible to trace the transformation by which the pulmonary parenchyma passes from the first degree of inflammation to it. Indeed, with the exception of this lesion, they assert that they have never met with any which could be regarded as indicative of chronic pneumonia, except in tuberculous cases, which we shall have occasion to notice hereafter.

As regards the prognosis of this disease, the authors are inclined to modify their former opinion, they having stated with MM. Gerhard and Ruz, that in general pneumonia, occurring in children between the ages of 6 and 15, in the midst of good health, terminated in a cure. This they now believe to be too broad a statement, and they deem that they will better express the results of their observations in the following words.

“Lobar pneumonia, occurring in children between 6 and 15, in the enjoyment of previous good health, when it occupies only one lung, and is complicated by no secondary affection, gets well in the great majority of cases.” Vol. i. p. 107.

The gravity of complicated pneumonia depends upon the nature of the secondary affections. Among the most fatal is rubeola, which, in the great majority of cases, provokes the reappearance of the inflammation, and causes it to assume a form always very serious, (double generalized pneumonia).

The treatment seems to be wisely directed, except as to the very free use of tartar emetic. The authors, indeed, advise caution in administering it to very young children, because of the danger of exciting vomiting and diarrhœa. These evils are certainly very serious, and should be carefully guarded against; but there is another, which is not less alarming, but to which the authors do not even allude; we mean the sudden and sometimes fatal prostration which it often causes in very young children, and which should always make us watchful of the cases under its use. Of calomel, too, in this disease, they speak doubtingly, at which we are somewhat astonished, its effects being here and in England so well known and so highly appreciated, as to make it, either alone or combined with opium, to be looked upon as the sheet-anchor in our treatment. Upon the whole, however, we do not hesitate to say that we have never met with a more able or a more complete exposition of the history of this disease, under all its forms, and under every aspect, than that which is contained in this chapter. Not a single point is overlooked, and yet the facts are grouped together so clearly, and at the same time so naturally, that they cannot fail to impress the reader with the conviction of the accuracy and truthfulness of the descriptions presented.

As a part of the history of bronchitis and pneumonia, a chapter follows on emphysema. This, "in a great majority of cases, is a mechanical and almost necessary consequence" of these affections, though almost any disease which causes a considerable acceleration of the respiration may produce the same condition. In children the dilatation of the vesicles is almost always an acute affection, differing in this from that of adults, with the exception, however, of rachitic individuals, in whom it occurs from pressure exerted by the ribs, and in whom alone it is chronic, and resembles, in its extreme dyspnœa, that which is met with in adult asthmatic patients. In children the sound on percussion remains normal, the appearance of the chest natural, and the respiration is remarkably exaggerated. Hence there is much difficulty in ascertaining the presence of emphysema, although it may be suspected in all cases where the chest is deformed by rachitis, or where an acute affection of the lungs, prolonged for some days, has caused great respiratory efforts.

"The causes may be summed up, in a forced distension of the pulmonary cells, in consequence of the impossibility of the air penetrating into other parts of the organ, or in an obstacle to inspiration, situated either in the bronchi or at some higher portion of the respiratory tubes. * * To these causes must be added acceleration of the respiratory movements, the intensity of the emphysema being in direct proportion to that of the oppression."

In their account of pleuritis, which occupies the next chapter, the authors exclude all cases which were complicated with tubercles, referring the reader to the third volume of the work for a description of this and other forms of tuberculous disease.

Without dwelling too long on this disease, we would direct attention to the following interesting remarks upon the modifications of the stethoscopic signs in cases of pneumonia complicated with pleurisy.

"We lay it down as a principle," say the authors, "that, when a pleuritic affection takes place in a child labouring under an hepatization of the posterior part of the lung, all the anormal sounds which were perceived at the level of the diseased point are considerably exaggerated, and the sonorousness disappears. We mentioned just now that this curious phenomenon does not occur in all

cases. The necessary condition for its production is, that the hepatization is sufficiently extensive and profound to prevent the lung from collapsing. Thus it may be inferred that if an entire absence of respiratory murmur succeeds the symptoms of a well-determined pneumonia, the hepatization was of slight extent, and but little profound; whilst, on the other hand, if the *souffle*, the resonance of the voice, and the dulness are suddenly increased, the pneumonia, to which the pleuritic effusion has just been added, occupies a large extent both in depth and surface." Vol. i. p. 153.

The treatment of pleurisy is conducted by the authors with much prudence. In the acute secondary attacks, and in the chronic form, they recommend, after the German practitioners, from whom they have adopted this practice, the use of calomel and digitalis. But at the same time, almost repenting the sanction they thus give, they advise extreme caution in the use of this "energetic medicine," calomel, especially in debilitated constitutions, and when it manifests a tendency to act too freely upon the bowels, never apparently dreaming of the possibility of combining it with opium to counteract such effects. Such is their general method of speaking of calomel, and we cannot help remarking that this bugbear of French therapeutics pursues the authors throughout their work. It is true that the use of this medicine is very often recommended by practitioners when it might well be dispensed with, and that injurious effects occur from the indiscriminate employment of it in all sorts of constitutions; but it cannot be denied that the prejudices due to this cause would deprive us of a very valuable remedy when properly directed, and would materially diminish our powers of successfully combating disease.

The authors have little confidence in blisters in the acute forms of pleurisy, and have no experience with them in chronic cases, though they think it may be useful to cover the affected side with a large diachylon plaster, to protect it from the action of cold, and to produce a slight cutaneous irritation. Of the operation of empyema they entertain a favourable opinion, and advise it where other remedies have failed to produce relief, as chronic pleurisy, independent of tuberculous disease, is not very rare in children, and, therefore, the operation offers a pretty good chance of relief and cure.

Pneumothorax in children, as far as the authors have observed, arises solely from a perforation of the lung, allowing the escape of air into the cavity of the pleura; they have never met with a case of which the origin could be traced to gaseous exhalation there. Its prognosis is more favourable in the child than in the adult, because children will bear a greater degree of dyspnoea, because cases have been prolonged for one or more months, because abscess of the lungs, one of its causes, is not necessarily fatal, and because cases of cure have been reported. MM. R. and B. have themselves witnessed two cases which recovered without any medical treatment, and M. Constant reports one cured by opiates. Seven cases of this affection are reported by the authors, all of which followed pneumonia; six of them were fatal, and one was cured. The perforation in those analyzed was very small, and led into abscesses precisely similar to those described under the head of pneumonia. Two detailed cases, one of which was fatal and the other recovered, are related at the end of this chapter.

In continuation of their account of the inflammation of the organs within the chest, the authors next consider that of the heart and of its

internal and external membranes. In looking over the recent works of Stewart and Condie on the diseases of children, we find no mention made of the occurrence of any of these cardiac affections; nor is this to be wondered at; for with the more extensive opportunities enjoyed in the European hospitals for pathological researches, they have failed to attract attention until within a very recent period.

Of pericarditis, which is "a rare and almost always secondary affection in childhood," 24 cases have been collected, and form the basis of the chapter on that disease. It is almost exclusively met with in children over six years of age, as a complication in the course of some other disease, especially rheumatism and scarlatina, and may be distinguished by an "obscurity in the beating of the heart, dulness on percussion, prominence of the precordial region, a rubbing sound (*bruit de frottement*) or a bellows murmur, during the first sound of the heart." It is not considered a very grave affection of children, less so when partial and occurring with rheumatism, than when general. The grounds of this prognosis "are, 1st, the frequency of milky spots, and of limited adherences, traces of cured partial pericarditis; 2d, the number of cases resulting in cure, collected by the authors, and the fact that in most of the children which died, death chiefly resulted from the diseases which had preceded the pericarditis." The treatment of this disease should consist in the use of antiphlogistics, especially blood-letting, and of digitalis and calomel, with nitrate of potassa.

Endocarditis and hypertrophy of the heart are rare diseases among children, and have never before been studied at this early period of life, except in a few isolated cases. MM. Rilliet and Barthez have collected and analyzed 16 cases, of which 3 of endocarditis were cured. Though presenting many interesting particulars in their history, they are not sufficiently numerous, and they differ too much in detail to allow the authors to give a general description of them. Evidences of inflammation of the internal membrane of the heart, similar to those observed in adults, but less advanced in their stage, were encountered in these cases. They consisted in bright inflammatory redness, adherences, insufficiency of the valves, simple, cartilaginous, and osseous thickening and vegetations, generally coinciding with lesions of the heart, though not necessarily so. Dilatation and hypertrophy were nearly equally frequent, though the authors are of opinion, judging from the small number of cases, "that children are much more disposed to dilatation than to hypertrophy of the heart; and this," they say, "is by no means astonishing, when we recollect that the feebleness and atony of the organ are the origin or consequence of a great number of the diseases of children." Vol. i. p. 221.

Several cases of clots found in the heart, and some, in particular, which were found in a state of suppuration in the centre one observed by the authors, and two by M. Maréchal, are detailed, and a table is given of all the lesions of the heart in 12 cases of cardiac disease analyzed, so as to show their frequency and character. These affections of the heart are not liable to be confounded with any other than pericarditis, from which they may generally be distinguished by the existence of a slight bellows sound during the first sound of the heart; without any unusual extent of dulness on percussion, with strong pulsations felt close under the hand, though dull in sound. No particular treatment is laid down for these cases.

As regards the persistence of the foramen ovale with hypertrophy of the

heart, the authors mention their inability to speak of it, it being a congenital affection, and one of which they have met with no example.

From the inflammatory affections of the chest the authors proceed, in the order they marked out, to those of the nose, mouth and neck, commencing with coryza. In its usual form this is a simple disease, and is too well known to require careful description; but there is a purulent and pseudo-membranous form, which has never been described, but which the authors have met with occasionally, and find examples of recorded in the works of M. Bretonneau and others. It coincided almost always with a primitive or secondary pseudo-membranous angina, showing its analogy with it. It is a very serious affection, every child which presented it having died "under the influence of the first affection as well as of the coryza." Indeed, it seems to us to be nothing more than an extension of the diphtheritic affection of the mucous membrane of the nose, either having its commencement there, or attacking it secondarily.

A short chapter on pellicular or ulcero-membranous stomatitis follows. It is a disease distinct from gangrene of the mouth, and of which "the essential and pathognomonic symptoms are more or less deep ulcerations and false membranes covering them;" it is not of itself a very serious affection, yielding easily to appropriate treatment, which consists in removing the child from the improper hygienic conditions which are generally its cause, and in making use of emollient gargles and washes of the solution of the chloride of lime, with alteratives and tonics internally.

Pharyngitis or angina, comprehending inflammation of the velum palati, amygdalæ and pharynx, which are generally found united in nature and of which the separation in description, in children at least, would lead to no practical advantages, may be either erythematous or pseudo-membranous in its anatomical character. The erythematous form is well known and well described here, but it is to the pseudo-membranous form that chief attention is directed, because it is peculiar to children. It may be primitive, corresponding with the gangrenous angina of authors and the diphtheritis of M. Bretonneau, or secondary, occurring most frequently in the course of eruptive fevers, as witnessed in scarlatinous angina, which may be considered a type of these secondary forms. In both of these, the pseudo-membranous exudation takes place; in the former, seated generally upon a mucous membrane, which preserves its polish and consistence, but sometimes is studded with ecchymotic spots, and, as the authors observe, occasionally presents ulcerations; these last, however, are exceptional cases; in the latter, the mucous membrane is intensely red, rough, thickened and softened and the amygdalæ are swollen, soft and infiltrated with pus; with deep-seated ulcerations at times. MM. Rilliet and Barthez agree with M. Bretonneau in believing that those who have spoken of the gangrenous tendency of the primitive form of this disease, have fallen into the error of mistaking for sphacelus both of the false membranes and posterior fauces, what are in fact, putrefied false membranes, continuous with the membranous cylinders lining the larynx, &c., the mucous membrane underneath being entirely free from any thing like sphacelus. New facts, indeed, show that gangrene of the pharynx does occasionally occur, sometimes sporadically, at others epidemically, but as the authors have proved in a memoir on the subject, in both cases it was entirely distinct both in its march and symptoms from pseudo-membranous angina, though both may unquestionably attack simultaneously the same individual.

As a general rule, except where the epidemic assumes a typhoid character, requiring a tonic and stimulant medication, the treatment should be moderately antiphlogistic, with an especial attention to topical remedies, consisting in the application of caustics, as hydrochloric acid, nitrate of silver, chloride of lime, &c., directly upon the affected parts; we should combine therewith the use of emetics, and in epidemics, a constitutional treatment of calomel or the sulphuret of potassa. There is an objection to bleedings, when a tendency to hæmorrhage or cutaneous diphtheritis exists; the cutaneous lesions caused by the bites of leeches, the section of a vein or a scarification may become the seat of a fatal hæmorrhage, or may give rise to formidable ulcerations which in these cases sometimes invade a large extent of surface. The possibility of such an accident should also make us reject the use of blisters entirely in pseudo-membranous angina.

Laryngitis, so terrible and fatal in some of its modes of attack and about which so much has been written, is described in the pages before us under five distinct forms: 1, the pseudo-membranous, either primitive, constituting true croup, or secondary; 2, spasmodic, or the asthma of Millar, stridulous croup, in which the inflammatory element is combined with a nervous one; 3, acute erythematous and ulcerous; 4th, chronic, and 5th, submucous, or œdema glottidis.

Of these, the most fearful and the most important in its consequences, is without any question, pseudo-membranous laryngitis or croup. The only positive diagnostic symptom of this form is the rejection of false membranes. Unfortunately, however, this does not take place in every instance, the authors not having noticed it in more than one-third of the cases which have passed under their observation, and when it does, not until the disease is already confirmed, often the day before, or that on which, death occurs; besides, it must coincide with other symptoms of the disease, and the false membranes must present the characteristic marks assigned to them, namely, a whitish yellow colour, the free surface often covered with a layer of puriform mucus, while that next to the mucous membrane is smooth, sometimes marked with longitudinal striæ, corresponding with analogous lines in the trachea, caused probably by the contraction of its fibres.

The authors agree in opinion with many recent writers, that a second attack of true croup never occurs. They state that they cannot discover a single clear example of its recurrence in the records of science, those so entitled being evidently cases of spasmodic laryngitis.

“There are some, however, in which we find that children who had experienced several attacks of croup, finally died of pseudo-membranous laryngitis: but this only proves that false croup does not protect from attacks of true croup. Indeed, there is a very simple cause for the absence of second attacks, in the fact that the first is almost always fatal.” Vol. i. p. 343.

The treatment by means of calomel pushed to the utmost extent, and by emetics is recommended as that which will be found the most useful; while great caution is advised in having recourse to blood-letting, this remedy being restricted to those cases in “which the child is vigorous, the disease sporadic and at the commencement the febrile reaction intense, and the fits of suffocation well marked.” In all cases it should be moderate. These fits of suffocation, by the way, are not so constant as is generally asserted to be the case, they having been wanting in one-third of the cases observed by the authors, and M. Hache. M. Maunoir of Geneva has recently

met with some success from the employment of the sulphuret of potassa, and again recommends it to the profession.

The most important matter relative to the treatment is contained in a memoir by M. Trousseau, which was placed by him in the hands of the authors for publication, and which is here given entire. It contains a summary of M. T.'s opinions and experience relative to the operation of tracheotomy, with a simple exposition of the reasons why he prefers this to that of laryngotomy. He recommends its performance, as soon as it is clearly ascertained that there are false membranes in the larynx, as the chances of success are thus much augmented, because, the false membranous covering has not yet had time to descend into the trachea and bronchial tubes and, by preventing the proper changes in the blood from the contact of the air, has not yet given rise to pulmonary engorgement or cerebral congestion, and because the topical treatment, consisting in caustic applications introduced through the opening into the trachea, of which he always recommends the adoption, and which he never fails to put in use himself, may be earlier employed to prevent the extension downwards of the disease, and will in all probability prove more beneficial. The mode of performing the operation, the necessary precautions to be observed, and the treatment afterwards to be instituted are carefully and ably exposed, and the paper is concluded by a series of statements, exhibiting the prognostic signs of almost every possible case which may present itself. (See Summary department of Surgery in this number.)

The second form, for which the authors prefer the name of spasmodic laryngitis, as "indicating the inflammatory and nervous elements which constitute the disease," has only recently attracted attention in France, though cases of it are recorded by Jurine and are found scattered in the journals. It had long been confounded with true croup, from which our authors clearly distinguish it—their method of diagnosis was presented in a previous number of this Journal by the reviewer of Dr. Condie's recent valuable work on the Diseases of Children—and state, as before noticed, that they believe that the cases of recurrence of croup, cited by different authors, belong in fact to this form of disease: they even consider it very rare to find this recurring within shorter periods than from six months to one or two years, of course not including relapses. It is most frequently observed, say MM. R. and B., between three and eight years of age, which is later than in the cases of Guersant, who says it is most common between one and seven, and which differs entirely from the statements of our own authors, who consider it almost peculiar to the period of first dentition, or from four months to two or three years. Even when uncomplicated, it may be a serious affection: we should never, therefore, give an entirely favourable opinion of it, until positive marks of improvement are manifest, and we should immediately treat it actively and without intermission by warm baths, emetics, sometimes by blood-letting from the arm or by leeches and revulsives externally.

Erythematous and ulcerous laryngitis, which are only degrees of one and the same disease, present very similar characters, differing in fact only in intensity, the former almost always recovering or passing into a chronic state, the latter, being an acute, serious primitive attack, following a rapid course, being a little more favourable in its prognosis than croup, and requiring much the same treatment. The erythematous form was, in every

instance observed by the authors, a secondary attack, manifesting itself most frequently in rubeola, variola, scarlatina, &c.

Chronic laryngitis, independent of tuberculous disease, is a very rare affection among children, the authors having met with it in but two cases, both girls about 13 years of age. Submucous laryngitis, or œdema glottidis is also very rare, though cases of thickening of the mucous membrane covering the vocal ligaments and the epiglottis are occasionally observed. Two cases only have been collected by the authors, and are reported in the chapter under consideration, where we find allusion to two others which have been published by Guilbert, which are very incomplete.

In continuation of the subject of inflammation, we are now brought to the consideration of the phlegmasiæ of the organs within the abdomen. The preliminary chapter contains a general account of the healthy and cadaveric appearances, and the pathological lesions, common to the whole gastro-intestinal tube, the reader being referred to subsequent chapters for a more detailed description of those peculiar to each portion of it. Attention is directed to the contracted state of the stomach sometimes met with, it being so diminished in size as to be "scarcely larger in diameter than the arch of the colon." This condition is solely the result of muscular contraction, as is proved by the fact that upon the section of its muscular fibres the natural capacity of the stomach may be restored. It may be produced by disease, as by acute peritonitis, or in consequence of low diet continued for a long period whether by the orders of the physician or by the carelessness and malevolence of the attendants, or it may be a mere cadaveric contraction, yielding, however, to the general relaxation of commencing decomposition. This last view appears to be sustained by the fact that the authors have never met with this contraction in children, who have been some time dead and who present the marks of advanced putrefaction.

Referring to that appearance of the mucous membrane, consisting in the presence of small black points, evidently seated in the follicles, and sometimes so numerous as to give the mucous membrane a blackish gray, or almost black colour, MM. Rilliet and Barthez, without attempting to solve the question, whether it is the result of inflammation or congestion, say, "we have found that this deposit of black matter is attended with no derangement of the digestive functions, and perhaps it should be considered similar to that which takes place in the pulmonary parenchyma and in the bronchial glands." Vol. i. p. 437.

Simple softening of the mucous membrane of the stomach, and especially of that of the great *cul-de-sac*, may occur as a diseased condition or as a cadaveric appearance; "but," say the authors, "taking into consideration the circumstances of temperature and of putrefaction under which we most generally meet with it, we are of opinion that the softening found on an examination made 24 or 48 hours after death, is more usually cadaveric than morbid." An opposite rule holds good in reference to softening of the intestinal mucous membrane; that is to say, its simple softening is much more often morbid than cadaveric. If there are evident signs of putrefaction, we may, without being certain of it, believe that the softening is cadaveric; otherwise it is morbid, especially if the intestines contain little or no liquid matters; and it is under these circumstances, that it is most frequently observed.

These and other natural and cadaveric appearances are separately studied,

and the chapter concludes with an admirable and well-digested summary of the anatomical characteristics of inflammation of the gastro-intestinal mucous membrane. Among the lesions described, are what the authors call pustules. This pustular inflammation has been but rarely met with, and always coincided with the administration of tartar emetic. It consists in a multitude of little elevations upon the internal surface of the stomach and small intestines, some scarcely prominent, others about half a line in height, from about half a line to a line and a half in diameter, generally presenting a central depression, and formed of a soft yellow matter, intimately confounded with the mucous membrane, and surrounded by a red areola of small extent. Sometimes they are larger and undoubtedly purulent in character, and are in that case found seated in the plates of Peyer's glands. This suppurative is, as it were, combined with the mucous membrane, and the pustule is not formed by the elevation of this membrane or of an epithelium by a purulent drop.

Finding no important symptomatic differences between inflammation and softening of the mucous membrane of the stomach, MM. Rilliet and Barthez consider these affections at the same time, and under the same head. While they admit that gastritis is more frequently and easily produced in children by an irritating cause, than is generally admitted at present by the strong opponents of the doctrines of Broussais, they declare their belief, that "it should not occupy an important place in the nosology of childhood," and that if they are in apparent contradiction to many authors, in affirming that softening of the stomach is only "a secondary lesion and not a primitive affection, controlling the organism, revealing itself by peculiar symptoms, and following a certain march," the reason must be looked for in the age of the children, who have passed under their inspection, for, according to all authors, except a few of the German writers, the gelatiniform softening, so much spoken of, of late, manifests itself chiefly between the period of birth and two years, attacking children of enfeebled constitution, or labouring under other diseases, and being, under these circumstances, a serious affection. While children of all ages are equally liable to gastritis, softening is much more frequent under than over six years of age, and among girls and cachectic children, than among boys and the strong and robust.

One of the most common causes of both these forms was, we are told, the employment of energetic medication, directed upon the gastro-intestinal mucous membrane, and particularly of the tartar emetic potion, repeated during several successive days. Two-thirds of the cases of gastritis and some of the softenings followed the use of these medicines, but in almost all these, the disease for which they were prescribed, was a secondary affection, the same consequences having scarcely ever been observed, when they were administered in a primitive disease. When the inflammation coincided with the administration of large doses of antimonials, "more or less copious and repeated bilious vomitings were almost constantly observed, while in the very small number of cases in which there was stomachic tolerance with gastritis, there was generally a development of antimonial pustules (as above mentioned) in the intestines. . . Vomiting, on the other hand, when the gastritis was spontaneous, was almost always absent, especially if there was enteritis present at the same time. . . In cases of softening, vomiting is less frequent than in gastritis after the administration of tartar emetic, but more frequent, when the softening is not caused by

this medicine; at the same time, vomiting more frequently accompanies softening coinciding with the use of tartar emetic, than spontaneous cases." P. 462.

From these facts, MM. R. and B. conclude that the opinion advanced by authors, that softening of the stomach is accompanied by constant, frequent and very copious vomiting, the children being unable to retain a single drop of liquid within the stomach, is most generally erroneous even in cases of gelatiniform softening.

Inflammation and softening of the intestines, whether erythematous, pseudo-membranous or follicular, are presented at length in the next chapter. The latter form, especially when occupying Peyer's glands is most carefully examined and studied, and the reader is cautioned against mistaking it for typhoid fever, to which it bears a close analogy, and from which, especially in very young children, it differs only in degree, they being often confounded together at that time of life and only gradually separating themselves with age. It is generally met with in the eruptive fevers, which so closely approach typhoid fever, and thus constitutes another point of analogy between these fevers and it.

The inflammatory affections of the large intestines are among the most destructive and frequent that are encountered in children; so much so, that MM. R. and B. state, comprehending in their calculation tuberculous cases, that one-half of the children which died, exhibited a more or less serious lesion of the large intestines; and when it is recollected, that this is especially the case with the youngest children, it will be seen that it is rare that a child between two and five years of age, dies without a colitis or softening of the larger intestines. As regards the symptoms, diarrhœa, which is "one of the most frequent phenomena in the pathology of childhood," is present as a general rule, in all forms of intestinal inflammation, the exceptions occurring only in slight cases. "It was absent in about one in twelve cases of inflammation or softening, whilst, on the other hand, of every twelve children who laboured under diarrhœa, giving ground for the suspicion of the existence of colitis, one presented a perfectly healthy condition of the intestinal canal. This statement is based upon about 300 post-mortem examinations, including tuberculous cases." Vol. i. 491.

Reasoning *à priori*, we might expect constantly to meet with *gargouillement* in these cases. The fact, however, is not so, and although the same circumstances which appear to give rise to it in typhoid fever, of which it is so characteristic, exist in these cases, it is, nevertheless, an exceedingly rare symptom, the authors having ascertained its existence "only four times out of several hundred cases of affection of the intestinal tube, not typhoid, among which were many cases of follicular inflammation."

These diseases are studied under four heads, acute normal, typhoid, dysenteric and chronic inflammation of the large intestines. The first is a mild, easily managed affection, when primitive, but capable of causing more serious consequences when occurring as a complication of some other acute disease, and therefore requiring strict attention on the part of the practitioner. It may complicate most of the diseases of childhood, and especially typhoid and eruptive fevers, among which rubeola is in this respect most prominent. The treatment must in such cases be directed against the primitive affection.

The typhoid form, to which the authors first directed attention, as being peculiar to children, resembles true typhoid fever in so many respects,

though differing in some of its pathological and symptomatic phenomena, that it can hardly be looked upon, we think, as any thing else than a modification of this disease, dependent upon the age of the child, showing, as the authors remark, a tendency in typhoid fever and enteritis to be confounded together during childhood, and to separate at a later period of life, becoming then distinct diseases.

Of the dysenteric form of entero-colitis the experience of the authors is too limited to enable them to present any important or valuable considerations: they therefore terminate this chapter with an account of the chronic or cachectic inflammation of the intestines. This may be suspected to exist, almost without fear of mistake, "whenever, in the absence of tubercular disease, a child is observed to fall away gradually, with a constant or rarely intermitting diarrhœa, if at the same time, the abdomen is more than usually flaccid and soft, or tender or painful; if the appetite is preserved, and if the thoracic organs, the liver and the spleen are in a healthy condition," of which facts we may assure ourselves by direct exploration. Vol. i. p. 536.

This is a very serious form of disease, and causes the death of a large number of children. The foundation of it is apt to be laid during the period of first dentition and the substitution of a new diet after weaning. The child should, therefore, be carefully watched at this time, its nourishment should consist of such food only as is found perfectly to agree with it, and it should enjoy the benefits of fresh air, cleanliness, exercise, &c. Indeed, this disease is within the control of properly directed hygienic treatment and of medicine, the children dying rather of the complications, of which the occurrence is favoured by their debilitated condition, than of the disease itself. Among the fatal complications, secondary pneumonia, is, we are told, unquestionably the most prominent, it being ascribable to the stasis of the blood in the lower parts of the lungs which is favoured by the cachectic and deteriorated state of these and other organs.

Important as it is in a scientific point of view, and as affording a nucleus around which to group the interesting facts which constantly fall under notice, and as the true method of establishing a fixedness in the views and opinions which are emitted relative to the diseases of the bowels, that the anatomical form should be carefully and accurately described and, as far as possible, traced in its connection with the symptoms generally attendant upon such morbid condition, so as to avoid the constant repetition met with in our systematic treatise, still, it must be confessed, as the authors themselves are compelled to admit, that the gravity of the symptoms and the extent and character of the lesions met with in the intestinal canal, are very far from corresponding, and that in fact the symptoms give the true indications for treatment in the present state of our knowledge of the affections of the bowels.

Acute peritonitis is, according to the observation of MM. Rilliet and Barthez, the least frequent of all the serous inflammations, except arachnitis. Of course, it must be recollected, that the children upon whom these remarks have been made, are far removed from the period of birth, (when this disease is said to be the cause of many deaths,) and that reference is made to those cases which occur apart from tubercles either in the peritoneum or in other parts of the body—the consideration of cases in which these are present being reserved to a subsequent portion of the work. The authors have never met with a case of chronic non-tuberculous perito-

nitis. Among the symptoms enumerated as characterizing this inflammation, are pain, tension and tympanitis of the abdomen, restlessness, fever, and a peculiar distressed expression of the countenance; but the authors have not met with vomiting and constipation so constantly as they have been said to occur. In effect, of the twelve cases, of which the histories are recorded by them, vomiting was observed in but two at the commencement, and in one about the 11th or 12th day, while constipation occurred in but two cases, in one of which the inflammation was consequent upon scarlatina, and in the other, upon perforation of the intestines during an attack of typhoid fever, when the diarrhœa which had previously existed and the urinary discharges were suppressed. Diarrhœa, on the other hand, existed in all the other cases from the commencement to the end of the disease, when death resulted, or for several days, when recovery took place: those which died, however, presented a slight softening of the mucous membrane of the large intestines. The treatment of this affection, of which the prognosis is always very grave, except perhaps when the inflammation is circumscribed, consists in an early resort to decided antiphlogistic means, when the age and constitution will admit of it, and in the use of mercurials and opium with warm baths, warm topical applications and acidulated drinks.

"Hepatitis is a rare disease among children;" we find no account of it in the recent works on the diseases of children, which have been published in this country, nor is any to be met with among the European writers, which corresponds with the description here given of it. The authors have collected but six cases of it, of which one was fatal: they were all primitive except this last, which occurred in a consumptive child, who died after presenting symptoms precisely analogous to those observed in the other five. The description presented in this chapter is founded solely upon the authors' own observations, they having been unable to discover any cases reported in the periodical publications or elsewhere. The disease commenced in all with a marked febrile movement, thirst and anorexia; an icteric tint was soon observed, at first limited to the conjunctivæ, and slight, soon extending over the skin, and of a more decided colour; the liver now increased in volume, passed beyond the edges of the ribs, extended into the epigastrium, and at the same time rose in the hypochondrium, causing the dulness on percussion to extend up higher; generally indolent, the tumour was easily circumscribed when the abdomen was soft and relaxed, but with more difficulty when this was tender; at the same time the urine changed in appearance, becoming beer-coloured, while the stools were natural, rare, or frequent, colourless. After a longer or shorter period the febrile symptoms disappeared, the tumefaction of the liver gradually diminished, the icteric colour gradually disappeared, the urine and stools became natural, and after twenty or thirty days all the morbid symptoms were removed, the acute symptoms having usually ceased some time before.

In the fatal case the liver, after death, was heavy and enlarged, smooth and regular on its surface, which was of a bilious yellow colour,—of a natural consistence, presenting, upon cutting into the larger lobe, a granitic appearance, or a mixture of bright red spots with an equal amount of yellow substance. The left lobe was free from these appearances, and the gall-bladder contained a glutinous brownish bile. When primitive this is not a serious disease, the liver readily resuming its natural size, and, therefore,

not passing probably beyond the first degree of inflammation. Other writers, as Henke and Burns, as noticed by the authors, have met with a more severe form of inflammation of the liver, complicated with cerebral symptoms, and terminating occasionally by abscess, as recorded by Burns. The treatment recommended by MM. Rilliet and Barthez, is to diminish the febrile movement, to resolve the tumefaction, and to promote the normal secretion of the bile by means of antiphlogistic remedies, of calomel and mercurial frictions, followed by the use of a combination of aloes, rhubarb, and soap.

In their account of the inflammatory affections of the kidneys, the authors have followed the classification of M. Rayer, and have arranged all the cases of disease of these organs, which have passed under their observation, under the heads of simple and albuminous nephritis, calculous nephritis and pyelitis, hyperæmia and anæmia of the kidneys, referring the reader to a subsequent part of the work for an account of renal hemorrhage.

"A very remarkable difference," we are told by MM. R. and B., "exists between the albuminous nephritis of adults, and that which they have been enabled to observe in children, a difference which renders difficult the anatomical distinction between simple and albuminous nephritis. It is, that the disease rarely produces the granulations of Bright, and that, in the generality of cases, it only passes to the third degree. So true is this, that of eleven children who presented, during life, the symptoms of albuminous nephritis, viz., a more or less extensive anasarca, with albuminous urine during a longer or shorter period, four only offered the third degree, two the second, and four the first, while, in one instance, the kidneys were putrefied. In a twelfth case they ascertained, at the autopsy, the existence of granulations, but the urine had not been examined during life, and furnished no albumen after death. On the other hand, in the few cases of simple nephritis they have seen they never met with suppuration, either diffused, or in scattered points, or collected in abscesses. They have, therefore, only been able to compare the nephritic attacks in children in their first stages, and sometimes under the simple chronic form.

"Now, according to the description of M. Rayer, the two kinds of nephritis are with difficulty distinguished at their commencement; the only difference which he points out being in the consistence, which is increased in one and diminished in the other. In simple nephritis the increase of consistence has appeared to the authors to be more marked in children than in adults. On the other hand they have noted, in the three first degrees of albuminous nephritis a marked diminution of consistence of the cortical substances. . . . Thus, in respect to their anatomical relations, these two kinds of nephritis much resemble each other. If it is added that during life the difference is not always more marked, it must be agreed that in infancy the two affections are but little separated from each other. In effect, the same is observed, at this period of life, with regard to several other diseases, which in adult age have little relation with each other." Vol. i. p. 585-6.

As regards the anatomical appearances of these two forms of nephritis, in the simple, we find a morbid red colouring of the kidneys with increased volume and consistence, but without suppuration; while, at a more advanced stage, and in a chronic case, "two different lesions are met with; a partial or general discoloration, with increased volume and hardness of the kidneys, and irregularity of the surface, or a smaller volume, with condensation of the tissue and a deepened colour. In the albuminous, with increased volume there is morbid colouring and softening of the cortical substance; at a later stage the same tissue is marbled with yellowish spots

of varying size, which at a third stage invade the whole of the cortical, and sometimes even the tubular substance. It does not attain the fourth stage as often as in the adult." Vol. i. p. 591.

Anasarca, which is the prominent, as well as the first symptom noticed, for in no case was the urine examined before this appeared, is liable to oscillate and even disappear, leading to the hope of a cure having been effected. It should not inspire too much confidence, for "the cessation of albuminuria alone is a positive symptom of the restoration of health." This last symptom alone distinguishes the two forms of diseases, and is therefore of much consequence. It is from the complications of the disease that most danger arises; the most important of these are inflammation of those organs which are subject to dropsical effusions; they occur most frequently in the serous membranes and in the lungs, and are attended with more or less copious serous effusion. "All the children which died presented one or more serious complications, and the only cases of simple albuminous nephritis the authors met with, were in children which recovered. The absence of these complications, however, is rare, and if a cure is obtained, it is generally in spite of one or more intercurrent affections." Vol. i. p. 604.

Both forms are serious diseases. The simple was only recognized after death; the albuminous, however, has been cured by them in one half the cases, of which the character was determined during life. "Two of those cured died at a subsequent period, and upon examination it was ascertained that the cure was positive, and that the kidneys were in a normal condition. . . But by a singular coincidence chronic nephritis is found to have been more frequently cured than the acute form, which generally carries off the patients rapidly, while the former is more amenable to treatment." Vol. i. p. 605.

Secondary albuminous nephritis is chiefly met with after eruptive and intermittent fevers. After scarlatina it occurs generally during the period of desquamation, from the twelfth to the nineteenth day from the commencement, and is caused by exposure to cold or change of temperature. It is as frequently met with, relatively to the frequency of these two affections, after intermittents as after scarlatina. Indeed, one of every six cases collected by the authors followed the former. It was in these cases chronic, and contributed, with the other complications, to produce a fatal termination.

When avoidance of exposure to cold, which should always be attended to, has not prevented an attack of nephritis, free bleeding, with warm applications to the back, or warm baths, and warm, soothing and nitrous drinks, should be immediately resorted to, and after bleeding saline purgatives may be employed with great effect. Vapour baths are highly recommended, to be given in bed regularly and successively. They were used by the authors in most of the cases which recovered, and tend to substitute the action of the skin for that of the kidneys, allowing these latter organs to rest. They are in some cases advantageously combined with the use of digitalis and nitre.

The authors have never recognized the existence of inflammation of the pelvis of the kidneys or pyelitis during life, though they have met with evidences of it after death. Hyperæmia and anæmia of the kidneys, appearing to be either the precursory condition or the consequences of simple or albuminous nephritis, and not having been recognized during life, present no useful practical considerations, either diagnostic or thera-

peutic, and we therefore pass them by and direct our attention to the inflammation of the encephalic and spinal organs, which alone of the internal organs, remain to be studied in this relation.

By considering, in a subsequent part of the work, inflammation of the meninges of the brain, as connected with tubercles, the authors have, as they remark, much diminished the importance of the present section. For "although it is a common saying, that most of the inflammations of children concentrate themselves in the head, we shall see that this is far from being the fact," when we abstract the tuberculous cases. Meningitis, apart from the tuberculous diathesis, has not been described, and MM. Rilliet and Barthez have been compelled to make up their account of it from the examination of only six cases, (five of their own, and one communicated by M. Legendre,) they having failed to find any others in the records of science upon which they could rely as being unconnected with tubercles. It is necessarily, therefore, imperfect, and must be regarded rather as a sketch to be filled up by future observers, than as an exact and full description of this disease, which consists in "an inflammation of the free surface of the arachnoid or of the pia mater, without tubercles either in the meninges, or in other parts of the organism."

The evidences of meningeal inflammation were, an alteration of the products of secretion, the arachnoid itself being smooth, polished, and transparent, while its cavity was found to contain pus, either in a liquid state, or, from much of its watery particles being absorbed, resembling false membranes. At the same time the meshes of the pia mater, itself brightly injected but without thickening or softening, were infiltrated with pus in great abundance, and over a large extent of surface, always upon the convexity, and in five cases out of six at the base also: sometimes the ventricular linings were also inflamed, and within the ventricles a small quantity of troubled secretion, and once pus, was met with, the brain itself being perfectly consistent and healthy.

The attack commences with considerable fever, intense headache, generally frontal, anorexia, bilious vomiting and great thirst, with profound alterations of the intelligence from the first day, alternating with stupor, agitation, delirium and coma. The symptoms rapidly increase in violence, with irregularity of the pulse, anxiety, embarrassed respiration, subsultus tendinum, tetanic symptoms, &c., ending in death at a period varying from thirty-six hours to nine days. The prognosis is, in the opinion of the authors, extremely unfavourable in this disease, from the rapidity of its march; and the indications for treatment require to be met by free bleeding both general and local, at the outset, the application of ice and cold compresses or affusion to the head, the use of the cups of Junod, or dry cupping by large cups applied upon the extremities. An early resort to mercurials, with a view to their constitutional action, revulsives, purgatives, absolute repose and quiet in a well-aired room, is demanded, and as a last resource, a blister should be applied to the head.

Two of the cases analyzed in the chapter under consideration, resulted from causes acting directly upon the head, one from insolation, and the other from exposure of the scalp, red and inflamed, after the fall of the scabs of a chronic eruption, which involved the greater part of it, had been obtained by the application of a large poultice. This affection would also appear to occur at times as an epidemic, an account of such a circumstance having been published by Dr. Albert in Hufeland's Journal for

1830; it is there stated that one hundred and fifty children were attacked with it in Berlin in the course of about two months. An abstract of this paper is given by the authors in the historical account appended to this chapter.

A short chapter follows on the diseases of the cerebral veins and of the venous sinus of the dura mater. These are chiefly interesting in an anatomical point of view, and the authors content themselves with giving an abstract of a paper published by M. Tonnelé, having themselves met with but very few instances of phlebitis of the sinus. They observe, with respect to cerebral congestion, which has been made to play so important a part in the diseases of children, that they find no symptoms necessarily attendant upon it, and that they have quite often met with the symptoms attributed to this condition of the brain, among which convulsions occupy a prominent place, when no such congestion could be discovered: nor have they any evidence when this was found, that it was not rather a consequence of, than an original condition giving rise to, the convulsions.

Encephalitis, or softening of the brain, so frequently observed in old age, is very rare in childhood; MM. R. and B. stating that they have only met with it, 1st, in children, who having died of different diseases, presented more or less serosity in the ventricles with an œdematous softening of the fornix, the septum lucidum, and sometimes the ventricular parietes, which did not reveal itself by any symptoms during life; and 2d, in cases where the softening was secondary to old cerebral lesions, and had developed itself around or in the neighbourhood of tubercles, hæmorrhagic collections, &c. But two cases of idiopathic softening of the brain are recorded; one, by M. Deslandes, in which there was softening of the whole cerebrum and cerebellum, and the other in the *Wochenschrift für die gesammte heilkunde*, 1837, No. II., revealing after death a well-marked red softening of the left corpus striatum. Both of these are presented by our authors, who have added from Dr. Durand, a very interesting case, in which the inflammatory lesion is well-marked and at a more advanced stage, the formation of pus having taken place, and a collection of it having been made in the lateral ventricles and in two cavities in the centre of the anterior left lobe. It was attended with severe cerebral symptoms.

Hypertrophy and induration of the brain, which are united by a common characteristic, viz., an augmentation of the density of the cerebral pulp, which is also the principal and most appreciable pathological phenomenon, are studied together, and in fact constitute in our authors' opinion, one disease. The sole apparent difference is, that in hypertrophy, the increased volume of the brain is very evident, whilst in induration, this is either absent or hardly appreciable. Yet, as the authors remark, this is not a sufficient distinction, for the augmentation of volume, in cases where the brain is generally indurated, may consist in an increase in the number and volume of the cerebral molecules, filling up the space which previously separated them. It is almost impossible to lay down any diagnostic sign of this condition: indeed, in one form alone, is it at all probable that it will be recognized during life, and that is, in children who have been exposed to the poisonous effects of lead: in these it may be suspected, when severe cerebral symptoms, as headache followed by convulsions, loss of consciousness and coma alternating with agitation and convulsive spasms, and, at the same time, violent bilious vomiting and severe abdominal pain appear;

especially when the child is known to have been exposed to this deleterious agency. Its course is very rapid, causing death in four or five days. It is sometimes apparently constitutional or congenital, but when acquired, has rarely been met with before the sixth year. The only treatment is prophylactic, to prevent the attack by removing the child from the action of its cause, or by other hygienic means; for when once developed, the disease appears to be beyond the resources of art. In the other cases, when the disease seems to have been congenital, and the head has progressively and proportionally increased in size with the brain, without alteration of the intellectual faculties, or derangement in motility or of the organs of the senses, the patient may live for many years, and finally die of an affection not necessarily an immediate consequence of the hypertrophy. Where these lesions are partial, they present themselves under different forms and cannot, according to the authors, be said to be the same affection. We have here, however, a simple narrative of the cases which they witnessed with some practical remarks.

MM. R. and B. next give a short sketch of spinal meningitis, stating at the outset their inability to trace its history with desirable accuracy, in consequence of their having themselves met with but one case of it, and that, too, complicated with tubercles, and of their finding the cases recorded by others, complicated either with cerebral meningitis, or softening of the spinal marrow.

A disease of more frequent occurrence is myelitis, or softening of the spinal marrow, of which the authors have themselves collected eight cases which are analyzed with three others in the chapter devoted to this subject. It is sometimes exceedingly rapid in its march, the children dying with the symptoms of acute tetanus, while in other instances it assumes a more chronic form, revealing its existence by a slight or more marked disorder of the muscular system, as by tetanic symptoms, paralysis, &c. It more commonly occurs among children over than under six years of age, and is, perhaps, not necessarily incurable, as cases of spontaneous tetanus have been cured: it is not, however, proved, as the authors remark, that in these cases there was softening of the spinal marrow. When it does exist, it cannot be mistaken after death, and may be met with in every degree, from slight diminution of consistence, to a diffuent state, of a dull white colour, more frequently seated in the posterior than in the anterior portions, in the white substance, and sometimes involving the whole thickness. General and local bleedings, purgatives, warm baths and opium in large doses, are recommended in the acute stage, and if they fail in procuring relief, a resort must be had to mercury and counter-irritation.

The consideration of the inflammatory affections of the spinal marrow is closed by directing attention to the fact, that it may sometimes be indurated, though the authors do not assert positively that this is an inflammatory lesion. Two cases of it are noted, in both of which paraplegia was observed.

We have thus presented a general summary of some of the authors' views upon the important class of the internal phlegmasiæ. The external inflammations, among which are included, those of the articulations, of the skin, of the cellular tissue and of the ear-tubes, remain yet to be considered.

Acute articular rheumatism is a rare affection in children; yet the authors have collected eleven cases of it, and have had others placed at

their disposal. In all of these the children had passed the age of seven and most of them were between twelve and fourteen years. This disease is a slight and easily manageable one, even when complicated with pericarditis, as sometimes happens, though one fatal case has been observed by M. Piet. The symptoms are the same as in the adult, though less severe and of shorter duration, yielding sometimes in six days and always before the fifteenth day. Rheumatism is liable to be confounded, unless care is observed, with a form of articular inflammation occasionally met with in variola, manifested by the occurrence of pain and swelling, and which is sometimes cured by resolution, but in severe cases ends in suppuration, or with another form connected with phlebitis, or with a rare and curious affection, namely, effusion of blood into a joint, of which several examples have been recorded, connected with constitutional hæmorrhage, and presenting many of the symptoms of articular rheumatism.

The acute and chronic inflammations of the skin are next passed in review. Following the classification of Willan, modified by Rayer, and discussing in a few brief preliminary remarks, the comparative frequency of each order, and the peculiarities they offer, the authors dwell especially upon impetigo and favus among the pustular, eczema among the vesicular, and roseola and erysipelas among the exanthematous eruptions, which are carefully described in as many different chapters, and present an excellent practical summary of every interesting point relative to the symptoms, march and treatment of these diseases. Erysipelas of the face they consider a very rare affection in children; that is to say,

“When it is spontaneous, or occurs in the course of some other affection, but independently of all external causes, and when not the result of a disease of the integument.” External causes, as insolation, friction, a fall, &c., may produce it, but, even under these circumstances, it is not easily developed. The duration of this disease is from about seven to ten days, and every case of spontaneous erysipelas, observed by the authors, recovered. “Is it not singular, it is asked, that precisely at the age, when chronic inflammations of the face and of the scalp, are so common, erysipelas should be so rare, and that besides it should be so little liable to be attended with cerebral symptoms (as the authors show to be the case?)” Vol. i. p. 725.

Cutaneous diphtheritis, induration of the cellular tissue (which last twice presented itself to MM. R. and B. under the same circumstances as anasarca, bore the same appearance, followed the same course, and in fact resembled it in every respect, except the hardening of the tissue), and otitis are the subjects of the concluding chapters of this first class of the diseases of children.

Before leaving this portion of the work, we cannot pass unnoticed the opinions herein expressed as to the little danger to be apprehended of causing serious accidents by the repercussion of the diseases of the skin, and especially of those of the scalp. MM. Rilliet and Barthez affirm that the effects which have been attributed to this cause have been overrated, that in many, perhaps, in most cases, disease previously existed in the parts which manifest it under such circumstances,—as when by topical treatment the affection of the skin had been rapidly cured—and that at any rate, the new disease may have been caused by the absorption of pus from the inflamed surfaces, or by the state of irritation in the membranes of the brain—when this organ is attacked—kept up by the topical treatment. Though we are compelled in a certain number of cases, to admit

the truth of these positions, we cannot close our eyes to the fact that they are not always, nor even in the majority of instances correct: indeed, the authors themselves confess the risk incurred by proceeding too rapidly in the cure of these cutaneous affections, when chronic, and advise that derivation should be made upon the intestinal canal by means of purgatives; and the daily experience of practitioners will teach them to be cautious of transgressing the practical precept of *festina lente*, in attacking these chronic disorders.

The dropsies form the second class of the diseases of children treated of in these volumes. They are frequent affections of childhood, and besides being active or passive, as among adults, they may be primitive or secondary, the primitive being always acute, the consecutive sometimes acute, sometimes chronic, or cachectic. Some have doubted whether the primitive form, which is confessedly very rare, is ever met with; but the authors set this question at rest, having collected some incontrovertible cases. It is in general a mild disorder, attended with a distinct, though slight febrile movement, and, according to their experience, always terminates in recovery. To it the acute secondary form bears a considerable resemblance, but this is more serious in its consequences, because the child is already debilitated by the previous disease. It presents itself usually either as a very acute disease, causing death in a few days, or even a few hours, or as merely acute, being in this case easily cured, or becoming chronic, and then sometimes terminating fatally.

The cachectic dropsies are frequent, sometimes of short duration and almost instantaneously produced. They resemble the chronic form in being apyretic, in causing few general symptoms, and in the great enlargement they may occasion of the cavities, into which the serosity may be effused or infiltrated. The intimate nature of the disease is, in all cases, the same, viz., "a serous effusion or infiltration, of which the origin is most usually a general modification of the individual." As it frequently invades several organs at a time, it is more often a general than a local affection. We here meet with a similar remark to that noticed when speaking of inflammation, viz., "that robust boys of more than six years of age are more subject to the acute and active forms, whilst among girls and feeble children under six years, the chronic and cachectic forms are most usual." Vol. i. p. 750.

Commencing with the organs of the chest, MM. R. and B. first treat of œdema of the lungs, which is one of the most frequent forms of dropsy among children, and of which they have collected 77 cases. It has, in general, attracted but little attention, and being almost always terminal, revealing itself by obscure and almost inappreciable symptoms, it scarcely requires treatment; besides, it is only secondary, and less serious than the original and antecedent disease. It is important, however, to bear the possibility of its occurrence in mind, as we are told that it sometimes constitutes a part of those sudden serous affections after scarlatina, and, from its intensity in these cases, endangers the lives of the young sufferers. Obscurity of the respiratory murmur and sub-crepitant rattle, as indicated by Laennec, are the only stethoscopic signs which can be relied upon as revealing this disease; but it is difficult to ascertain their existence when caused by this state of things, as so many other affections of the organs of respiration are apt to mingle their sounds with those produced by this. The oppression of the respiration is always marked, and is greater in pro-

portion to the extent of the œdema and the rapidity with which it takes place.

Hydrothorax "merits attention in but a very small number of cases, being fatal when it occurs at the termination of a serious disease, and only presenting a chance of cure when it is acute itself, and the consequence of an acute disease." Vol. i. p. 763. Its certain existence can only be ascertained when there is a concurrence of great oppression, dulness, or diminution of sonorousness, obscurity or absence of the respiratory murmur, and at the same time absence of pain in the side. In many cases, as in the adult, the effusion probably takes place during the last hours of life, or even at the moment of death.

Hydropericardium is rare among children, and furnishes no interesting points for consideration, manifesting itself by no particular symptoms; indeed, the only lesion met with in the six cases analyzed by the authors was a comparatively very inconsiderable quantity of serosity in the pericardium. These two affections must be treated on general principles, according as they are acute or cachectic, squills and digitalis being combined with other general or local remedies.

MM. Rilliet and Barthez have analyzed 25 cases of ascites. They remark "that very young children often have the abdomen large and developed, so as, at first sight, to lead to the suspicion of their being ascitic; the error is more liable to be made if there is some œdema of the legs, and more especially of the abdomen; in this last case, in effect, a false fluctuation is often felt; the nature of the disease may be ascertained, 1st, by the pitting upon pressure; 2d, by the interposition of the hand pressing lightly upon the abdomen between the two points where the fingers are placed to seek for the fluctuation." P. 768. In a very young child fluctuation may be ascertained by having it held with the abdomen downwards, and then examining by percussion at the umbilicus.

Primitive ascites they consider a very rare disease, having only met with six cases of it; at any rate it is not a very serious form, and its spontaneous cure is not deemed at all impossible. As regards the cases of Dr. Wolff, who asserts that he has seen 100 in six years, MM. R. and B. say they fear "there has been some error of diagnosis; for at the same time that he affirms that the fluctuation was undoubted, he says that the mesenteric glands became enlarged. How could he ascertain this positively, seeing that he never made an autopsy of the disease?" A *résumé* of his work, taken from the *Bulletin des Sciences Médicales* is, however, given, that all may judge for themselves of the accuracy and applicability of his statements. The acute, active, secondary form so closely resembles peritonitis, that it is only distinguishable from it by the concurrent existence of dropsy in other parts of the body. The effusion is never very great, the march may be very rapid, in which case the prognosis is that of peritonitis—it being a very serious affection—and the treatment is the same as that directed in secondary peritonitis.

The chronic or cachectic secondary form of ascites is only serious in consequence of the extensive development of the cavities to which it may give rise, and the gradual increase of the cachectic disposition which may attend it. As regards *paracentesis*, the authors think that "it is rarely necessary to perform this operation, for it is only in a very small number of cases that the effusion is so great as to distend the abdominal parietes sufficiently to cause suffocation and the other accidents which

require a prompt evacuation of the liquid. . . We only admit it as the last resource, and in very rare cases." Vol. i. p. 774.

Hydrocephalus, according to the authors, results "from the effusion or infiltration, not inflammatory, of a liquid into the cranial cavities, or into the cerebral substance." Edema of the brain is admitted to exist whenever a white softening of the central parts is met with, and is very often the result of the direct infiltration of the ventricular serosity into the cerebral pulp. Hydrocephalus is almost always a consecutive affection, and may be either acute or chronic. Its importance, in the acute form, has been greatly diminished by the modern discovery of the dependence of serous effusion in the encephalon upon tuberculous meningitis, and, indeed, it is difficult to establish the fact of the presence of the affection we are considering, "the only symptoms which the authors have been able to refer to it being great agitation, cries, or constant moaning, succeeded, a little before death, by extreme prostration and stupor, loss of consciousness, coma, or even general insensibility, with dilated pupils, and a fixed stare." These, however, were not constant, nor were they all met with in the same cases. Acute hydrocephalus may be met with in all these diseases, which are often complicated with anasarca, as scarlatina, rubeola, gangrene, &c., and under this title should be classed those cases which have been described by authors as instances of serous apoplexy. The authors, like MM. Guersant and Blache, have never met with a case of primitive hydrocephalus, though such have been recorded, though at a time when the examination of the encephalic organs were made with less care than at present.

Chronic hydrocephalus is a more important form of disease. The authors do not believe that as a primitive acquired disease it has ever been met with, notwithstanding the assertions which have been published to the contrary; nor is this at all astonishing; for, as we are told, it is not at all proved that primitive chronic dropsy of any kind occurs in children. Cases which appear to authorize the belief in its possible occurrence have been published, and are transcribed by the authors in the chapter under consideration, but they are very doubtful. Be this as it may, this form may be either congenital or acquired; the cases here analyzed are chiefly of the latter class. The authors, after stating that they do not agree with M. Breschet in ascribing these arachnoidean effusions to inflammation of the meninges, as they have never seen them result from this cause, attribute them more frequently to the development of a tumour—and this, too, generally of a tuberculous or cancerous nature—in the cranial cavity, causing a compression of the *venæ Galeni* or of the *sinus rectus*, and thus obstructing the circulation, or to any other cause interfering with the free passage of the blood through the sinus. The difficulty of treating this affection depends upon the nature of the cause which produces the symptoms observed; even if we were able to remove the effusion, the lesion causing it still remains to reproduce the same effects. The authors doubt the propriety and efficiency of compression by means of adhesive strips, both from the risk incurred of causing pressure of the brain, and on account of the transpiration from the skin being thereby arrested. Tapping, which is reported to have been attended with success in some cases, is not applicable, they think—notwithstanding the cases published by Dr. West—to this form of hydrocephalus, for the reason above given, that though the fluid is evacuated, the cause of its effusion still remains behind;

but they admit that it may be useful in another form, consequent upon a hemorrhage into the cavity of the arachnoid. We cannot take leave of this subject without directing attention to the authors' experience in cerebral auscultation, which they give in the following remarks.

"Dr. Fisher, of Boston, has asserted that the ear applied to the head, and especially on the anterior fontanelle, can perceive a distinct *bruit de souffle* in this disease. We have never been able to recognize this sound in acute or chronic hydrocephalus; MM. Barth and Roger have also failed to do so. On the other hand, we once perceived it in a child which, judging from the size of the head, was believed to be hydrocephalic; yet upon examination after death, the brain was found in a perfectly healthy condition." Vol. i. p. 796.

Anasarca is a disease of much importance, says MM. R. and B., whether we consider the conditions under which it occurs, or its frequency. They have met with it in more than one-eighth of the patients they have observed, and present an excellent description of its symptoms and appearances, and of the circumstances under which it arises. Primitive anasarca is becoming more and more rare, we are told, as the advances in pathological anatomy disclose some hitherto unrecognized lesion to which it might be traced; but six cases of this form have fallen under their observation, occurring mostly in boys in good health, of good constitution, and between the ages of six and fifteen years. It is a light affection, was cured in each case, and should be treated—as also the acute secondary form, which much resembles it in its phenomena,—by antiphlogistic cooling drinks, sudorifics, diuretics, among which digitalis, squills, and nitre, are most highly recommended, and purgatives, when the intestinal canal is ascertained to be in a healthy condition. Of the secondary form, 155 cases, of which 79 were acute and 76 chronic or cachectic, have been collected and are analyzed. "Almost all the diseases of children, acute or chronic, may be complicated with anasarca, which is either acute or chronic, concomitant with, or posterior to the primitive disease, and is induced either by an excess or deficiency of the plasticity of the blood, or by some unknown condition of that fluid, or by an obstacle to the course of the venous blood, or by a disease of the skin and more especially of the lymphatic network, or finally by an affection of the kidneys, of which the mode of action is still obscure." Vol. i. p. 834. It most frequently occurs between the ages of two and five years, and, in its chronic and cachectic form, in girls and children of feeble constitution, and should be treated in reference rather to the primitive disease upon which it is engrafted, and to the constitution of the child; the cachectic form requiring the use of tonics, as ferruginous preparations, generous diet, bark, and frictions upon the skin.

We have thus passed cursorily over the matter contained in the first volume of this excellent treatise, and have reached the third class of diseases, according to the arrangement laid down by the authors, the hemorrhages, with the consideration of which the second volume opens. These, as we are told at the outset, are among the least interesting diseases of childhood, being rare, almost always secondary, frequently latent or obscure, and only revealing themselves when the sanguine discharge can take place externally or occupies an organ accessible to sight. They are much less frequent than the dropsies, though they would seem often to result from the operation of the same causes. The plethoric active forms are extremely rare under the age of ten years, and are almost exclusively met with after this period, especially in girls; while the chronic and cachectic

varieties are much more frequent between one and five years, the latter being almost exclusively passive, arising either from the want of due plasticity in the blood, or from a material alteration of the substance of the organic tissues or a perforation of the vascular parietes, which is much more frequent in childhood than at any other age. There is one form of hemorrhage which is almost exclusively met with in childhood, viz: the constitutional, which is evidently dependent upon some hereditary and constitutional predisposition. It is to be regretted that the authors have made no investigations, as to the alterations of the blood itself, which must evidently have more or less influence in determining the occurrence of hemorrhage; for if they had pursued this subject with the same intelligent and persevering industry, which they have brought to bear upon almost every other point touched upon in these volumes, it cannot be doubted that they would have added much and very valuable information upon hæmatology. Without doubt their future labours will be directed to this among other interesting matters.

The preliminary chapter contains a good general account of the phenomena of hemorrhages, of the modifications they exhibit when occurring in a serous or mucous membrane, or in the parenchyma of an organ, of their different forms, whether primitive or secondary, acute, chronic, or cachectic. Of the causes, of the prognosis—favourable in primitive cases, less so in secondary cases, though the nature of the primitive disease, the number of the organs attacked, and the copiousness of the hemorrhage must be considered in forming our opinions in these cases—and of the treatment which is generally applicable, but which must be modified according to the form of the attack, the cause and copiousness of the bleeding, the constitution and condition of the patient. The hemorrhages of the lungs, of the brain and of the skin, being the most important of the class, have received especial attention from the authors, those of other parts, being also treated of, but with less detail.

Pulmonary hemorrhage presents itself under two forms, hæmoptysis, when the fluid is rejected, and pulmonary apoplexy, when the blood is extravasated into the substance of the lung, this organ either preserving its vesicular character or being broken up and disorganized. Hæmoptysis is not frequent among children, MM. R. and B. having only met with two cases of the primitive form in girls, where the discharge was small in quantity, a few in tuberculous children, where it was almost always terminal and the cause of death, and four cases complicating gangrene of the lungs. The appearances of pulmonary apoplexy were encountered in twenty-two cases of children dying of various diseases. The existence of these lesions was not generally ascertained during life; and when any symptoms were observed indicative of this disease, it was usually only the day previous to the child's death: indeed, no special symptoms can be pointed out. Four of the patients died of suddenly fatal (*foudroyante*) hemorrhage, two of these from rupture of one of the vessels of the lungs, but without the occurrence of hæmoptysis, in either. These apoplectic attacks occurred most frequently in boys of or over five years of age and most generally in the course of pulmonary or bronchial tubercles, hemorrhagic variola, scarlatina, nephritis, colitis and secondary pneumonia.

Hemorrhage in the pleura, epistaxis, and hemorrhage of the stomach and intestines are briefly considered in separate chapters. The two last are very rare, and the authors doubt, from the facts they have consulted,

whether hæmatemesis has its origin in the discharge of blood from the vessels of the stomach, believing that it takes place in consequence of the flow of blood from other parts, which becomes lodged in the stomach and is thereupon rejected. Intestinal hæmorrhage, they state, has only been observed in the course of hemorrhagic eruptive fevers, of typhoid fevers and purpura, or in cases of tuberculous ulceration, causing the lesion and opening of a vessel of some size, or when an intestinal arteriole has been perforated by a lumbricus. Renal hemorrhage has been met with almost exclusively in eruptive fevers, and to the accounts of these last we are referred by the authors for their remarks respecting this symptom.

A much more important and interesting series of cases now demands attention, and has been studied by the authors with even more care than they have uniformly devoted to their investigations. We refer to cephalic hemorrhages. These may be seated, either under the scalp—these are very rare after the first year, although frequent in new-born children, but may occur above or beneath the pericranium, causing serious accidents—or between the dura matter and skull, or between the dura matter and arachnoid—neither of them presenting much practical interest, either in diagnosis or therapeutics, the latter, in fact, being much more rare than is generally supposed, the effusions being found to be actually effusions into the cavity of the arachnoid, though ecchymotic spots are sometimes met with external to this membrane—or finally within the cavity of the arachnoid. These last are by far the most interesting. The hemorrhage may be so great as to simulate actual hydrocephalus, as was the fact in the cases collected by the authors. Pure liquid blood, we are told, is very rarely found in the arachnoid cavity, for after its effusion, it is rapidly separated into a liquid serous part and a coagulum. This last undergoes various transformations—its colour changing from a red or even blackish tint to yellowish red or even yellow—as the result of which it passes into the condition and appearance of false membranes, delicate, elastic, more or less resisting, resembling sometimes the arachnoid itself in delicacy and transparency, at others a really fibrous membrane, becoming opaque, tenacious, and even, perhaps, as in the adult, stratified. The authors trace these clots, sustaining their views by appropriate *post-mortem* examinations, from the first moment of effusion to the false-membranous appearance described above; they are either single or several, their edges prolonging themselves into very thin layers, sometimes floating by one edge in the serous liquid and attached by the other to the arachnoid, sometimes to both of its surfaces, from which they are easily detached, leaving this smooth and transparent above, though the visceral portion often presents marked lesions, becoming thickened, opaline and resisting, so that it may be raised in a single layer, leaving the brain beneath perfectly healthy and rarely even congested. These clots have been mistaken for false membranes, the consequences of inflammation, and many cases of hydrocephalus actually resulting from hemorrhage have erroneously been attributed to inflammation of the arachnoid passed to a chronic state. The authors, however, state, that the only source to which they can trace these appearances, with any degree of satisfaction, and in accordance with facts, is to sanguine exhalation.

Except in cases where the effusion is so abundant as to constitute hydrocephalus, it is rare to observe any symptoms characteristic of the disease, that are not equally met with in other encephalic affections,

which may even be concomitant with it. Even when hydrocephalic symptoms are present, we can do nothing more than ascertain the fact, without discovering the cause. We must therefore, say the authors, rely on other circumstances to assist in forming the diagnosis. Among the most important of these is the following. "We (the authors) have never seen a child two years old and under, die hydrocephalic in consequence of cerebral tubercles; the disease was in them caused by sanguine effusion, and it is only when the head has begun to develop itself after two years of age, that we have found tubercles or other cerebral tumours with hydrocephalus (the authors, however, admit that instances of tuberculous ventricular hydrocephalus have been reported, one in particular by Constant). Can sanguine effusions, after the age of two years, give rise to hydrocephalus? We have no example of it, though we cannot affirm that it is always so." Vol. ii. p. 46. Another method of ascertaining the nature of the fluid, is to make an explorative puncture, which, in cases of doubt, the authors do not hesitate to recommend, judging by the character of the evacuated liquid and the depth to which it is necessary to penetrate, of the seat of the disease. The importance of ascertaining this fact is considered by the authors as very positive: for they think that it is in cases of this kind that the treatment of Gölis has been successful; and in the event of this disease being diagnosed, they recommend its immediate adoption to promote absorption, and if, after a reasonable trial, it should fail, they advise having recourse to puncturation in order to discharge the liquid, before the clots have been too completely transformed.

Hemorrhage into the meshes of the pia mater, they have never met with, though cases of it are reported by others. Cerebral hemorrhage loses much of its importance in children; of slight extent and rarely primitive, it is either latent, or appears only during the last days of life, or during the course of a disease, itself mortal. At any rate it is extremely difficult to distinguish the encephalic hæmorrhages from each other. It would appear, however, the authors think, "that the convulsive form of symptoms belongs more especially to meningeal apoplexy, whilst the inflammatory symptoms are mostly met with in cerebral hemorrhage itself." Nor is there difficulty in diagnosing these from other affections of the encephalon. Previous disease, the injudicious treatment of chronic affections of the scalp, a cachectic tuberculous disposition, and, in an especial manner, an obstruction to the circulation, particularly the venous and sub-diaphragmatic portion, are among the most prominent causes of these hemorrhages. All authors agree that cerebral hemorrhages are very rare in children, while some affirm that those of the meninges are frequent. They have, however, scarcely attracted the attention of writers. The conclusion to which MM. Rilliet and Barthez have arrived, has been corroborated by a paper published by M. Legendre, about the same time that their first memoir upon this subject appeared in the *Gazette Médicale*.

A full and interesting account of purpura, concludes the subject of the hemorrhages, and we are thus brought to the consideration of the fourth class of diseases—Gangrenes, which "form, in the pathology of childhood, one of the most marked and distinct classes of disease, from the uniformity of their aspect, of their course, of their causes, and of their gravity. Most generally fatal, gangrene is happily, comparatively infrequent, and ordinarily supervenes in the course of diseases already fatal of themselves." Vol. ii. p. 99. The skin, mucous membrane and lungs are most liable to gan-

grene, and it is to the study of the circumstances connected with its appearance in the mouth, pharynx, lungs and skin, that the authors confine their attention in this work. Gangrene is generally very rapid in its march, its fatal termination being dependent as much upon the disease which it complicates, as upon itself, though the nature of the tissue and the form of the mortification have an evident influence upon it. The eruptive fevers and especially rubeola, are the most common determining affections, and inflammation, though it rarely causes it, may predispose certain organs to its attack, as the pharynx in scarlatina, rubeola and variola, the lung in rubeola, &c. Gangrene is chiefly met with between the ages of three and five, endemic in most cases, epidemic occasionally, and manifesting, in this case, a tendency to attack several organs at a time. It is the result of a general condition, and not of a local one, reacting upon the economy: what this general condition is, the authors do not pretend to say. It should be counteracted by a tonic treatment, whilst topical remedies, among which cauterization is the best, should be employed to limit its extent.

Gangrene of the bronchial tubes is first treated of. It is generally consecutive to that of the lungs, though cases are met with independent of this condition, one of which is reported by the authors, having occurred in a girl eight years old, in the left bronchus, without corresponding gangrene of the lung.

This last is not a frequent affection, being always, or almost always secondary. Sixteen cases of it analyzed in the chapter before us. Fetidness of the breath, so important a symptom in the pulmonary gangrene of adults, is often wanting in the child; indeed, the diagnosis of this condition is very difficult, and can only be established by grouping together various symptoms, most of which are often absent, such as sudden prostration, fetid and gangrenous breath,—when no gangrenous lesion of the throat or mouth is present—the occurrence of hæmoptysis, the blood or expectoration becoming gangrenous in odour, &c. This last symptom of hæmoptysis so rarely encountered in children having occurred in this connection four times in sixteen cases. The prognosis is fatal, though if there is possibility of recovery, our imperfect means of diagnosis, preventing our ascertaining the fact. It may develop itself in the course of pneumonia, though the authors assert that they have never met with an example of primitive pneumonia, terminating in this manner, nor have they ever seen it occur *d'emblée* in an individual in perfect health. They think it probable that it may succeed a sanguine effusion or an apoplectic congestion of the lung, in consequence of the putrefaction of the blood poured out, and they consider it proved that it may occur in a nearly healthy pulmonary tissue: but in all these cases there must be present a general condition of the system which predisposes to such attacks. To bring about this predisposition, the eruptive fevers, and rubeola in particular, exert the most decided influence. As respects the treatment, the authors remark, "When a disease escapes our diagnosis and is only discovered after death, it is impossible to lay down any rules for its treatment; we must, therefore, be guided by analogy, when its existence has been ascertained." Vol. ii. p. 122.

Gangrene of the pleura is only interesting as an anatomical lesion; it reveals itself by no special signs, and therefore offers no therapeutic indications. Gangrene more frequently occurs in the mouth, than in any other part of the body, belongs peculiarly to childhood, and is almost necessarily fatal. The subject of the chapter under consideration is *cancrum oris*,

gangrene of the mouth, properly so called, and not the gangrenous aphthæ of children. It manifests itself in children, under miserable hygienic circumstances, in the course of, or during convalescence from, some acute or chronic affection, by an ulceration of the mucous membrane, sometimes gangrenous from the outset, or by œdema of the cheek: the mortification extends rapidly, occasioning perforation of the cheek, denuding of the bones, &c. The termination of the disease, whether abandoned to itself, or in spite of treatment, is constantly fatal. Of twenty-nine cases reported but three recovered. Topical treatment by caustics should be immediately resorted to, at the same time that the strength is supported by nutritious diet and tonics.

Gangrene of the pharynx is a rare disease. In very young children, where there is difficulty of making an examination of the throat, it may be suspected whenever the breath is fetid and gangrenous, while the respiratory organs perform their functions well, and there is no gangrenous expectoration, the cheeks being at the same time free from *cancrum oris*. It is desirable to distinguish it from that form of pseudo-membranous angina, in which patches of grayish-black and very fetid false membranes are met with. At the outset, there is hardly room for mistake, as these patches do not assume this appearance at once, while at a later period, the application of a caustic will immediately clear up the case by changing the character of the pseudo-membranous inflammation. In other respects the diagnosis is not very important, this lesion being a secondary one and almost necessarily fatal, occurring generally in eruptive fevers, and to be treated by washing the throat with solutions of chloride of lime, by astringent gargles of bark, &c., and the use of tonics.

The last chapter of this section relates to gangrene of the skin and of the external genital organs. It is considered under two heads; that "which is improperly called spontaneous gangrene, which is in fact the consequence of arteritis, or at least of the formation of a clot in the arteries, following a peculiar course, and exclusively occupying the extremities," and that which, not the result of arterial obliteration, occurs upon the skin either covered with, or deprived of its epidermis, and indifferently upon all parts of the body. We can only advert here to the authors' opinions respecting the action of blisters as a cause of this affection—opinions, which are certainly well founded, and cannot too often be repeated and too strongly borne in mind in practice. "It is remarkable," say they, "how easily in children, under some circumstances, blistered surfaces assume a gangrenous aspect; this tendency, as well as that to ulceration and to cover themselves with false membranes, is one of the causes why blisters should be banished from the therapeutics of young children. For ourselves, we have had but few opportunities of witnessing the gangrene of blistered surfaces, because in the services we have followed, the physicians have avoided the application of these agents." Vol. ii. p. 198. They remark, afterwards, in an appendix to these volumes, "we do not think, however, that we should deprive ourselves entirely of the resources offered by this energetic derivative; though it should only be employed under circumstances clearly warranting it." Vol. iii. p. 707.

The fifth class of diseases, which we have now reached, the neuroses, or "apyretic diseases characterized by a trouble of the functions of the nervous system, which itself presents no appreciable lesion," comprises pertussis, spasm of the glottis (Kopp's asthma), convulsions, chorea, con-

tractions and essential paralysis. Epilepsy and hysteria, which belong more particularly to adolescence and adult age, spontaneous tetanus, which is most generally connected with some affection of the spinal marrow, and neuralgia which is almost unknown in childhood, are not studied by the authors.

As an additional reason to those usually urged in support of the opinion which regards pertussis as a nervous affection, MM. Rilliet and Barthez state that the same convulsive paroxysmal cough with similar intermissions which characterizes this disease, is observed in cases where the pneumogastric nerve lies in contact with, and is probably compressed by, tuberculous bronchial glands, as well as in cases of traumatic lesions of this same nerve. It is hardly necessary, however, to multiply proofs of this fact, which is now pretty generally admitted, though it is difficult to account for the specific characters of its symptoms and of its mode of propagation. The danger in whooping-cough, arising chiefly from the complications, the authors devote much space to their consideration, and to fixing carefully the character and duration of the symptoms which are usually met with. The complications are studied under three heads. 1st, Those which may be considered as of the same nature as the disease, viz. convulsions and spasm of the glottis, the former being very far from infrequent, though peculiar to very young children, occurring during the second stage, and being of a very serious character. 2nd, those connected with it by their seat or by their local phenomena, as bronchitis—which is, by some, said to be always present, but which the authors only observed alone or united with pneumonia in about one-half their examinations, being more frequent the longer the disease lasted—pneumonia,—which, as before mentioned, generally coincided with bronchitis—and tuberculization, which is far from being a rare complication, though it usually manifests itself during the third period, and is, in a great majority of cases concentrated in the lungs or bronchial glands, or at least, is in excess there. Emphysema has been spoken of as a complication; but, as the authors show, unless inflammation of the lungs or bronchi was present, this was never met with; and even when they complicated whooping-cough, emphysema was proportionably less frequent than when they were unconnected with it. Indeed, the mechanism of pertussis would authorize us to make this inference, independently of *post-mortem* examinations, for each paroxysm consists of a series of forced expirations, followed by insufficient and difficult inspirations, which do not allow the air to reach and distend the smaller bronchial tubes and the vesicles of the lungs. 3d. Other complications, which are rather coincidences, as they have no other connection with the principal affection.

The diagnosis of this affection from bronchitis with spasmodic and paroxysmal cough, especially in the latter stages of both, and from tuberculization of the bronchial glands—"a distinction both important and delicate to make; important, because it is a question of distinguishing a disease susceptible of cure from one almost necessarily fatal; delicate, because whooping-cough being sometimes followed by phthisis, it is very difficult to ascertain which is cause and which effect"—is clearly laid down by the authors in their valuable chapter on pertussis, which would well repay perusal. In the treatment of pertussis, they do not advise attempting to jugulate the disease, but that every effort should be made to diminish the intensity of its symptoms and to prevent complications. They think

highly of belladonna, among the narcotics, though its good effects are far from being generally believed in, and recommend the use of the subcarbonate of iron, during the second period, in consequence of its evident effect in diminishing the duration and intensity of the paroxysms. As a last resource when the rational or empirical remedies have been exhausted, vaccination remains to be tried. "The English authors in particular," they say, "have published unquestionable cases of its efficacy. It is true that in France similar results have not been obtained; but the trials with it are not yet sufficient to admit of a final decision of the question of its utility." Vol. ii. p. 244. A sufficient number of cases have been published, we think, to give warrant to the belief that its adoption may both abridge the duration and diminish the intensity of the symptoms; at any rate, there can be no harm in vaccinating a child at this time, if the operation has not been before performed.

Spasm of the glottis or Kopp's asthma has been observed by the authors in but one case. Though they admit with some of the German authors an opinion, which has also been sustained in this country by a number of dissections, that the origin of the disease is, in many cases, pressure of the thymus gland upon the bronchi, lungs, arteries, veins and heart, interfering with the due performance of the functions of these organs and vessels; they state that cases of spasm of the glottis without enlargement of the thymus gland are undoubtedly to be met with, and that when hypertrophy does occur, it is not necessarily followed by spasm. They believe, in effect, with Marshall Hall and most of the English and German authors, that this affection is actually a spasm of the glottis.

Convulsions are the subject of the next chapter. They are treated of in this connection for the same reasons which induce the authors afterwards to devote a chapter to contractions and essential paralysis, viz. that, although sometimes the result of an appreciable cerebral lesion, they are also, in other cases, spontaneously developed, or occur during the course of affections of very different natures, without our being able to discover any relation between the previous disease and the convulsion, or to find any appreciable encephalic lesion. Hence they may be either primitive and sympathetic of some other affection, without encephalic lesion, or they may be symptomatic of encephalo-rachidian disease. The former are much more frequent in children under than over one year. Both forms are admirably described in the pages before us. The occurrence of epilepsy among children has been doubted, though we cannot but think without sufficient reason, and are not at all astonished at the question proposed by the authors, whether convulsions repeated at different intervals are not in fact attacks of epilepsy. For themselves, they can see no difference between this affection and violent convulsions, save in the repetition of the paroxysms, the symptoms being precisely the same in both, and they agree with Baumes, who admits no difference except that which time establishes. As regards the diagnosis, if there is hereditary predisposition and the age of six years has been passed, there is every probability that these repeated convulsive attacks, followed by complete restoration to health, are in fact epileptic. They may however be symptomatic of an affection of the brain, especially if the child is born of phthisical parents or has lived under bad hygienic conditions, as sympathetic convulsions are rare after the age of six years. As to cerebral congestion being a cause of this affection, the authors agree with the opinions expressed in Copland's compendium, that

this condition is rather an effect or consequence of the convulsion than the cause, though sudden congestion may be productive of convulsions: but it is often otherwise and they believe that in these cases, besides, or antecedent to, the hyperæmia, some other lesion of innervation existed which was the immediate cause of them. MM. R. and B. recommend, with M. Trousseau, compression of the carotids, as a means of relief from convulsions, in cases where the child enjoyed previous robust health, is of good constitution, and labours under a first attack, or when it is irritable and nervous, and when the attack comes on apparently without cause or after some moral perturbation.

Chorea is not a very frequent disease in the *Hôpital des Enfants Malades*, to judge from the number of cases reported in this work, which amounted to but 19, some of which were obtained from other persons. The assertion of M. Ruz, that intercurrent diseases do not modify the choreic affection is proved to be inaccurate, and several cases are reported in proof of this position. In effect 9 of the 19, experienced more or less severe intercurrent attacks, of which the influence was marked in 8 of them. They were eruptive fevers, which at first exasperated, and then caused the chorea to disappear entirely; sometimes they favoured the diminution and cessation of the choreic symptoms from the commencement. The treatment of this affection by antispasmodics and tonics is preferred to any other, the authors reserving the use of purgatives for those cases in which there is habitual constipation or when the disease is kept up, or exasperated by atony of the digestive tube. In fact the authors cannot entirely divest themselves of the fear, perhaps real in their hospital practice, of creating irritation and inflammation of the intestinal canal, by these means.

Two chapters follow on contractions and essential paralysis, which conclude the descriptions of the neuroses, and which we must pass by without further notice.

The sixth class of diseases treated of in the present work, is continued fevers. MM. Rilliet and Barthez entertaining with respect to these affections the same opinions as those advanced by M. Littré, define them thus. "Febrile affections, without intermission in their course, characterized, anatomically by an inflammation of the skin or of the mucous membranes, having their origin in a general morbid condition, itself probably the result of a particular modification of the blood." Vol. ii. p. 338. In this definition, are included typhoid fevers, variola, scarlatina and rubeola, which are believed to be something more than mere diseases of the mucous or cutaneous envelope, the general symptoms appearing before the local lesions, which last are very often at variance with the intensity of the febrile and nervous symptoms, and, indeed, at times entirely unnoticed. Although the eruption in typhoid fever is a much less important symptom than in the other enumerated affections, and the mucous inflammation in it exceeds the cutaneous, directly the contrary of what occurs in the others, they all resemble each other in so many respects as to warrant their being grouped together. In their complications, too, there is a difference; for, while the eruptive fevers complicate each other, the same child suffering under scarlatina, rubeola, or variola, either succeeding each other, and running regularly through their periods, or appearing simultaneously, mutually influencing each other, and becoming irregular, "it is extremely rare, to see typhoid fever developed after an eruptive fever, which, in its turn,

never occurs during the febrile period of dothineritis." Vol. ii. p. 345. The eruptive fevers differ again from typhoid in their mode of propagation. "Thus, scarcely is a patient, affected with scarlatina, variola or rubeola, brought into the wards, before we see several others attacked with the same affection; it is not so with typhoid fever, which has always come to the hospital from without, and has never propagated itself within." Vol. ii. p. 346. But while the eruptive fevers propagate themselves readily within the walls of the hospital, it is remarked by the authors that "it is extremely rare to see them develop themselves primarily (*d'emblée*) in the wards and at a period when no child in them laboured under these diseases; on the contrary, almost invariably one or more children affected with one of these eruptions and brought from without, formed the commencement of a series of cases, which did not cease to increase until all the children susceptible of taking the contagion had been attacked." Vol. ii. p. 347.

In respect to contagiousness, the authors find scarlatina to be a little more contagious than variola, which is much more so than rubeola: whilst rubeola is a little more frequent in the hospital than variola, which is much more so than scarlatina. As a prophylactic against these eruptive diseases, isolation is the only one worthy of any confidence, and should be strictly insisted upon, and especially in those cases, where those who would be otherwise exposed to their attacks, are already labouring under other affections.

Such are some of the many interesting and valuable points discussed in the preliminary article, which is immediately followed by a chapter on typhoid fever. The first monograph upon this disease, as occurring among children, which appeared in France,—though it had under different names been spoken of by some of the English and German writers—was published by M. Rilliet, in 1839; about the same time a memoir on the same subject was issued by M. Taupin, and contained an analysis of a large number of cases, which established generally the same results as those deduced by M. Rilliet, from his observations. The value and character of M. Rilliet's treatise, of which the present chapter may be considered a second edition, are fully established by the fact that it has been reproduced almost entire by M. Louis in the second edition of his admirable work on typhoid fever.

Typhoid fever is a frequent disease among children, and differs from almost all others to which they are liable, in being primitive in the immense majority of cases. The lesions by which it is revealed, anatomically differ somewhat from those observed in adults, and are thus summed up by the authors.

"1st. We meet in children with the same lesions of Peyer's glands, of the isolated follicles and of the mesenteric glands, as in the adult; but the ulcerations are generally smaller, less numerous and less deep. 2d. The form of the alterations of the plates (*plaques*), observed in the immense majority of cases, is that described under the name of soft plates (*plaques molles*). 3d. Ulceration is not the necessary consequence of their inflammation, which may terminate by resolution. 4th. Ulceration, when it exists, occurs later than with adults. 5th. Cicatrization takes place also with rapidity: we have found it complete the thirtieth day; at the third month, very manifest cicatrices may still be found. 6th. Ulceration of the membranes is very rare. 7th. Lesions of the spleen are far from being constant. 8th. The blood is most generally

liquid, or in soft blackish clots; the vessels are often coloured venous red." Vol. ii. p. 363.

In one-fourth of the cases, constipation was observed at the commencement of the attack, always, however, giving place to diarrhœa at a later period; and the authors notice that vomiting,—which occurred in about half the cases, which were generally serious ones—appeared in preference among those who were constipated at the outset. The means of diagnosis, the pathological phenomena and the symptoms are ably presented by the authors in their long and carefully prepared expositions of these points, and might, perhaps advantageously, be dwelt upon. We will, however, only enumerate some of the chief symptoms, which are to be relied upon in forming a correct diagnosis. They are "a somewhat marked loss of strength, though it is often difficult to estimate its degree, agitation, or slight nocturnal delirium, copious diarrhœa, accompanied with gurgling (*gargouillement*) in the iliac fossa, prominence of the spleen, numerous rose-coloured spots and sudamina, a febrile movement more intense than in gastritis, and continuing after the ninth day, and the existence of the sibilant rattle of bronchitis," which ordinarily accompanies this disease. Vol. ii. p. 382.

It is clearly shown here, that, contrary to the results obtained by M. Louis, in the case of adults, it is impossible in some instances among children to distinguish enteritis from the typhoid fever, they being confounded together so as to be inseparable in a considerable number of cases. "The predisposing causes of this disease are, the age from eight to fourteen years, the male sex, a good constitution, want of acclimation to city residence, and an epidemic influence;" the authors regard with doubt the effects of hygienic conditions, as regards nourishment, cleanliness, state of habitation, &c., in producing this disease, and while they do not positively deny the influence of contagion, they consider it much less evidently operative here, than in many other diseases.

Convinced of the necessity of employing much judgment and care in the treatment of typhoid fever, the authors wisely begin with the remark that they recommend no exclusive system—as was the fashion of the day in this disease, particularly—but advise a careful appreciation of the symptoms, which will, perhaps, demand a daily modification of the treatment. The purgative method, which has been so warmly advocated by those who first put it into use, has appeared to MM. R. and B. to have no very evident effect, in children, upon the duration of the disease, the fever, the state of the digestive organs, or the nervous symptoms; while they think "it is distinctly proved that the repetition of purgatives, especially in very young children, is more injurious than useful," in consequence of their liability to facilitate the occurrence of enteritis, a disease so easily developed in children, and so serious in its effects. Bleeding shall be reserved for those cases where it is clearly indicated by the symptoms, and at the commencement of the attack. The tonic, exclusive, treatment is next examined, but the evidence derived from their own experience is so limited as not to warrant the authors in making any conclusions from it.

We cannot but recall here the fact—though we fear to trespass too much upon the reader's patience—that this disease among adults has, of late years, been the subject of experiment of every French physician of standing, and that it has furnished more victims, perhaps, to experimental practice than any other in the nosological table. The most opposite and

exclusive methods of treatment have been proposed for its cure, and no matter how irrational or absurd all have found warm advocates and victims. This system, as barren of useful results as it is unwise and barbarous in its institution, is strongly presented in all its horrors by the clever author of *Mystères de Paris*, himself a physician, and the son and grandson of a physician. We hope the lesson of morality taught in the following extract may not be lost upon our readers.

“Was the doctor desirous of ascertaining the comparative effects of a new and somewhat venturesome treatment, in order to be enabled to arrive at conclusions favourable to this or that system, he would take a certain number of patients, treat these by the new method, those by the old, and others he would abandon to the sole resources of nature. After which he counted the survivors. These terrible experiments were verily a human sacrifice offered upon the altar of science.”

Happily for their own reputation, MM. Rilliet and Barthez do not sanction, on the contrary, they strongly disapprove of, these exclusive systems of practice. Indeed, we may say, without any fear of question, that there is no work of the modern French school, which exhibits throughout a more judicious and rational system of therapeutics than that which we have under consideration.

Variola is the subject of the next chapter. Our authors admit varicella as a variolous affection, rather because the description of others have proved it to arise from the same causes and under similar circumstances, than because this view is sustained by their own observations. They have evidently seen but very few cases of it, only nine, and those mild ones. Variola, varioloid, and varicella, are separately and fully considered, as respects their course, duration and precursory symptoms, and a long, careful, and minute account of the variolous eruption from the earliest appearance of papular redness to the period of complete desiccation, desquamation, &c., with all its varieties in each form, is presented and contains much and valuable information. The concomitant affections, as swellings, inflammation of the mucous membranes, &c., are next studied. The means of diagnosing variola in its first stage, before the appearance of the eruption, are indicated as far as possible: the authors, indeed, think that we may pronounce almost certainly upon the existence of a variolous attack, “when a child has fever, constipation, bilious vomiting, if at the same time it has not been vaccinated and complains of lumbar pains;” more especially if an epidemic of this disease is prevailing, or the child has been in any way exposed to its contagion.

The complications of this disease with other eruptions, are very interesting. They always aggravate the prognosis, more particularly, however, when they come rapidly upon each other, being less dangerous when an interval of health separates them. “Thus,” say the authors, “we have seen a little girl recover from varioloid, scarlatina and rubeola within forty-seven days; whilst in two other instances, when the same three eruptions appeared within a period of ten and sixteen days, the children died.” The authors take some pains here, and when studying the subject of tubercles, to examine into the respective influence of variola and tubercles upon each other, the former having been stated to preserve from tuberculous disease, giving rise to the inference, that the introduction of vaccination, while it protected from variola, increased the tendency to tuberculization. The results they present are, that variola and tubercles are in fact repul-

sive to each other, the former does not immediately engender the latter, and when occurring in connection with them appears more frequently in cases where the general diathesis is not marked: if it is marked, the variola is modified, by being rendered irregular, but when the tubercles are not numerous, they tend to pass to a cretaceous state and to be cured.

"We believe," say MM. R. and B., "that we may conclude without departing far from the truth, that the occurrence of variola has but little power either to favour or arrest the predisposition to tubercles. This conclusion cannot apply to vaccination, and if, in so serious a question, it were allowable to form an opinion from a limited number of facts, we (the authors) would say that children which have been vaccinated, are more disposed to tuberculization than those in which this operation has not been performed. In emitting this result of our observations, we anxiously desire that an improper estimate should not be placed upon the value we assign to it. We by no means regard vaccinia as a cause of tubercles; for we have never seen the chronic affection immediately succeed it; we merely note that vaccinated children more frequently die tuberculous than free from tubercles, and that the contrary is the case with children not vaccinated: whence we conclude that vaccination very probably favours the predisposition to tubercles."*

These results certainly are curious, and are presented as given by the authors; we do not think, however, that they will impair the credit in which vaccination is held at the present day, unless some more decided indication of its bad effects are adduced. It undoubtedly renders milder the attacks of variola, that once dreaded scourge; and none would be willing to forego this positive advantage from the vague fear of its inducing an equally fatal, though more insidious attack. "How does it happen," the authors ask, "that mild cases of variola, or, in other words, that varioloid is so much more frequently met with now than formerly, even in those who have not been subjected to this prophylactic treatment? May it not be due to the laws of inheritance, the children inheriting from vaccinated parents a less marked disposition to contract this disease? If such is the case, may not succeeding generations witness the complete disappearance of this disease, as well as of the disposition to contract it." Vol. ii. p. 526.

Though unable, from the very limited number of their cases, to settle the question of the propriety of vaccinating children, while exposed to the variolous contagion, MM. Rilliet and Barthez rather incline to the opinion, that the performance of the operation does not prevent the development of the disease, and that it causes injurious perturbation in its course; and they conclude that we should not vaccinate young and debilitated children, which have passed some time exposed to variolous contagion, it being better to remove them from its influence, and await the development of the normal disease: if this does not come on after a reasonable time, they may then be vaccinated. They recommend re-vaccination, as there appears abundant proof, that after a certain number of years, the protective powers of the vaccination become enfeebled. As regards the period at which this should be performed, during the term of life under consideration in these volumes, the diminution of its power being as yet very slight, they agree with M. Bosquet: "We willingly abandon it to the desires of our

* "In effect, of 208 children which had been vaccinated, 138 died tuberculous, 70 non-tuberculous. On the other hand, of 95 children, dying without having been vaccinated, 30 only were tuberculous, 65 not so. The same relation is presented in children who have neither been vaccinated, nor had variola: of 61 cases in this category, 19 died tuberculous, and 42 free from tubercles."—Vol. iii. p. 116.

patients, unless the sudden appearance of an epidemic furnishes a plausible pretext for greater instance."

Premising that, in their opinion, every attempt at general abortive treatment is dangerous in children, MM. R. and B. agree that, when directed to certain parts, as to the face, to prevent pitting, &c., it is useful and advisable. They prefer the use of the *emplastrum vigo cum mercurio*, which is both easy of application, unattended with pain, and, as far as their experience goes, invariably successful, when applied before the third day, in close contact with the pustules, and continued on until the termination of the eruption on the other parts of the body. There is but one inconvenience, and it is but a slight one, in its use, and that is, that in five instances the authors have met with attacks of hydrargyria arising from it, occurring at about the eighth or ninth day of the eruption, and four or ten days after the application of the plaster, and consisting of a slight erythematous or vesicular eruption about the abdomen, pubes, and thighs, lasting a few days, and then disappearing with desquamation in large scabs. It was attended with no danger, and, in fact, no other symptoms than the mere eruption.

MM. Rilliet and Barthez have a great dread of purgatives in this disease, because they would have the effect to remove the constipation which they consider the normal condition of the bowels in variola, and which should therefore be respected, unless it causes uneasiness and pain by its obstinacy, when some slight laxatives may be given. "For ourselves," say they, "who know how easily intestinal affections are caused in children, and who have ascertained the existence of follicular development, or of an inflammation of the mucous membrane of the digestive organs in a good number of cases of variola we have examined after death, we entirely reject this method (the use of purgatives,) and we avoid the production of diarrhœa in a young variolous patient." Vol. ii. p. 550. Certainly no one would desire to provoke diarrhœa in a young variolous patient; but we cannot but believe that the very fact of allowing the constipation of the bowels to continue will have a tendency to produce the effect it is so desirable to avoid, in consequence of the effort nature will make to relieve the bowels of such an inconvenience. Is it not, therefore, better and more rational to keep the bowels in a soluble state by mild laxatives from the beginning, if necessary, than to wait until pain and distension result from neglect, and demand their exhibition under circumstances not quite so favourable?

Much care has evidently been bestowed upon the preparation of the following chapter on scarlatina; indeed, the same may with truth be said in respect to this whole section of continued fevers, which contains a large amount of very useful matter, suggestive of reflection, and replete with instruction. Our attention can be given to a few points only, as we have allowed this notice to extend much beyond the limits within which it was intended to have restricted it. The authors remark that there is an evident relation between the brightness of the eruption and the freeness of the desquamation, and that it is a favourable sign to find this last take place very freely, inasmuch as it appears to prevent the development of anasarca; at least, some of the cases in which this complication was observed, were attended with but a moderate fall of the epidermis. This would seem to fall in with the generally prevalent opinion, that the milder forms of scarlet fever, accompanied with but slight eruption, and followed, consequently, by but slight desquamation, are most liable to be followed by secondary

affections. In some of the cases observed by the authors, "two successive eruptions of scarlatina appeared; a sort of relapse, rather rare, and which should rather be considered a second attack, when an interval of health occurs: in these cases the second eruption is generally anomalous in its character." Vol. ii. p. 583.

The pharyngo-laryngitic affection is not essential to scarlatina; for of 87 cases, 18 had no angina, 37 had it but slightly, 20 severely, and in 12 no note is found of this lesion. The scarlatinous eruption in the throat is an entirely different matter, and should not be mistaken for it. The angina may take the grave ulcerous and pseudo-membranous form, this secondary inflammation invading the laryngo-tracheal passages, and presenting sometimes appearances resembling those of pseudo-membranous laryngitis. The authors have never observed, even in these cases, the symptoms peculiar to croup. As to anasarca, it was observed in about one fifth of all the cases between the twelfth and fourteenth days, and of these two-thirds laboured under nephritis, manifested by a characteristic lesion, either during life or after death. By the results obtained by the authors, the influence of cold and of albuminous nephritis in the production of this complication is clearly proved; an opinion which agrees with those now admitted by the best authorities: indeed, "it is impossible to deny that they often concur in the production of those dropsical affections; the action of cold is probably more general than that of nephritis, often precedes it, and is thus, at the same time, the cause both of the dropsy and of the disease of the kidneys; and consequently, it is chiefly against its effects that our prophylactic treatment should be directed." Vol. ii. p. 618.

Hydrocephalus was rarely met with by the authors, and only in the latter stages of scarlatina, manifesting itself by marked nervous symptoms, which are liable to be confounded with those due, at an earlier stage of the disease, to sanguine congestion, "which complicates this more than any other eruptive fever, rendering it promptly fatal." As to the prognosis to be made upon the occurrence of cerebral symptoms, indicative of some disease of the brain or its membranes, the authors state, "that cases of cure have been collected in which the disorders of intelligence were very marked; whilst all those patients who, *during the first fifteen days of the scarlatina*, were attacked with convulsions, convulsive movements, contractions, in a word, symptoms of derangement in the locomotive apparatus, without exception, died:" a result directly opposite to that obtained when these symptoms manifested themselves at a later period, and were attributable to serous effusions. Nor is it probable that these acute symptoms of cerebral disturbance are occasioned by meningitis; for, during their duration, no diminution of the *rapidity with irregularity of the pulse* was observed, a change so constant in tuberculous meningitis. Vol. ii. p. 623-4.

Scarlatina and tuberculization are repugnant to each other, according to the facts recorded in these volumes.

"Scarlatina very rarely engenders tubercles; tuberculous children are very rarely attacked with scarlatina, which is then anomalous; children cured of tubercles contract scarlatina more frequently than the preceding, and in their case the eruption may be normal; the tuberculous children who contract scarlatina have but a small number of crude tubercles, and very rarely softened ones; and in these cases the tubercles often manifest a tendency to become soon cretaceous." Vol. ii. p. 634.

The only prophylactic treatment which will probably succeed, is the

perfect isolation of those liable to contract the disease, even from the attendants on those labouring under it. With the utility of belladonna, in small doses, the authors have no experience; still they incline to the opinion that it may be serviceable, and recommend its employment, not, however, to the neglect of isolation; they justly remark that more positive proofs of its efficacy are still wanting, and more explicit information as to its effects, and the time for, and mode of, its administration, is much to be desired.

The last of the continued fevers here studied by the authors, is rubeola. They have endeavoured to render the history of this affection complete in respect to the influence of its possible complications upon its course, a point hitherto much neglected. They show that the course of the normal form of this disease is modified by an intercurrent disorder, being differently affected in accordance with the nature of the complication and the period at which it makes its appearance. Their conclusions are presented in the following summary.

"1st. *Normal* rubeola commences during the course of good health, and has a regular march;

"2d. It may be simple, or be accompanied or followed by different accidents, which constitute complications. Those of these accidents which are febrile never commence before the period of decrease of the eruption;

"3d. The *anormal* rubeola, which commences during good health, becomes anormal in consequence of being complicated by an acute and febrile disease, which manifests itself either before the appearance of the eruption, or during its period of increase;

"4th. The complications which arise as a sequel to normal or anormal rubeola are, either acute inflammatory diseases which keep up the acute febrile movement, or chronic diseases which change the active fever of rubeola into a hectic fever;

"5th. Anormal rubeola may arise during the course of another disease; its symptoms are then partly confounded with those of this last, and give to the patient an aspect which is rarely that of rubeola. Not less serious than the other forms, this rubeola may be complicated with the same accidents;

"6th. Finally, rubeola occurs at times during the last days of life; then completely anormal, it scarcely manifests itself but by an eruption, and hastens the death of the child." Vol. ii. p. 704.

The most frequent complication of rubeola—which rarely occur singly, several presenting themselves either simultaneously or successively—is broncho-pneumonia, this being much more usual than either bronchitis or pneumonia alone. The latter, when it occurs, is lobular, with a tendency to disseminate itself through both lungs, and to advance to the third degree, even to suppuration. It is very rarely lobar. When the pneumonia coincides with the commencement of the rubeola, it may, in all probability, be considered a distinct disease, and, indeed, it would seem to be so; for, say the authors, "it is under such circumstances that we have ascertained the existence of lobar pneumonia in rubeola, whilst the pneumonia which arises during the eruption is always lobular." Vol. ii. p. 715. Broncho-pneumonia may be developed at three periods, which we will name as they most frequently present it; during the precursory symptoms, or the first days of the eruption, during the decrease of this, and after the rubeola, as far as the eruption is concerned, is cured. This complication is one of the most frequent—if not the most effectual—cause of death in measles; scarcely one of four or five attacked with it recover, whilst in simple rubeola recovery is the general rule, and even when pneumonia

alone complicates it, the cures are more frequent than the deaths. Cold is certainly the active agent in the production of broncho-pneumonia, and should therefore be strictly guarded against. Pharyngo-laryngitis is a frequent complication, though the authors are of opinion that where the pharyngitic inflammation was observed, it might, and should be ascribed to the coincident prevalence of scarlatina. They remark that "when these two diseases coincide, the intensity of the pharyngeal and bronchial inflammation is in inverse proportion to the intensity of the affection; each usually complicates. Thus, if the scarlatina is most severe, the bronchitis is most prominent, while if the rubeolous eruption be most decided, the angina will be the most serious affection." Vol. ii. p. 714.

Next to the pulmonary complications in frequency, are the inflammation and softening of the intestines. These alone are rarely mortal, but when coinciding with the pulmonary lesions they are very serious. Young children are peculiarly liable to this form of the disease, which is easily aggravated and rendered active by the improper use of purgatives. "Rubeola," say the authors, "unquestionably favours the development of tubercles; not as frequently as certain pathologists have pretended, but sufficiently so to constitute a considerable proportion. Thus, to judge from our own experience, of about 11 cases of primitive rubeola, one would be followed by the development of tubercles." Vol. ii. p. 729.

Having thus completed our consideration of the second volume, we find that our notice has extended to such a length that we must postpone the examination of the third and last volume to a future occasion. It is devoted almost entirely to tuberculous diseases and deserves a more careful analysis, both on account of the importance of the subjects, and the manner in which they are handled, than could be given to it in the very limited space into which it would be necessary here to compress it.

C. R. K.

BIBLIOGRAPHICAL NOTICES.

ART. IX.—*Anatomie et Physiologie du Système Nerveux de l'Homme et des Animaux Vertébrés; ouvrage contenant des Observations Pathologiques relatives au Système Nerveux, et des Expériences sur les Animaux des classes supérieures.* Par F. A. LONGET, Lauréat de l'Institut de France, (Académie des Sciences;) Docteur en Médecine de la Faculté de Paris; Professeur d'Anatomie et de Physiologie; Chirurgien de la première succursale de la Maison Royale de Saint Denis; Membre de la Société Anatomique. Paris, 1842. 2 vols. 8vo., pp. 942 and 698.

The Anatomy and Physiology of the Nervous System of Man and of the Vertebrated Animals generally; comprising a Series of Pathological Observations in relation to the Nervous System, and a detail of Experiments made upon the higher order of Animals. By F. A. LONGET, M. D., &c. &c.

THE name of M. Longet is already known to the student of Physiology as the author of several very able papers contained in his *Mémoires de Physiologie Expérimentale*, and in the work before us he presents anew strong claims to their favourable consideration. Comprising a full and critical examination of the views of those anatomists who have made the structure of the different portions of the nervous system the special object of their investigations, together with an accurate exposition of the various hypotheses that have been advanced in relation to its functions, and an analysis of the facts upon which the most important of these are respectively based, in order to determine their real value and bearing, the present work will have a peculiar interest for every one who is desirous of becoming intimately acquainted with the anatomy and physiology of this important portion of the animal organism. It is at least calculated, by its fulness and general accuracy very materially to shorten their labour in the acquisition of what has already been done towards establishing the actual structure and functions of the brain and its appendages, including the spinal marrow, ganglions, and nerves.

The two volumes, as M. Longet remarks, contain an analytical and critical exposition of whatever of importance has been written in relation to the anatomy and physiology of the nervous system. The author has not contented himself with a simple digest of the opinions and investigations of others, but has imposed upon himself the laborious and difficult task of submitting those opinions and investigations to the test of experiment and observation—the conclusions of preceding physiologists being throughout carefully compared with the results of his own researches.

The author, in his investigation of this important branch of physiology, and which he appears to have studied with considerable attention, treats, 1st, of the development of the nervous system in general; 2dly, of the distinction of the apparatus of sensibility from that of motion; 3dly, of the mode of action of the motor and sensitive nerves; 4thly, of the intimate structure of the nervous system; 5thly, of its chemical composition; 6thly, of the nervous force. This constitutes the first part of the work, or that which treats of the general anatomy and physiology of the nervous system. The second part, devoted to a consideration of the special anatomy and physiology of the nervous system, embraces, 1st, the particular history of the cerebro-spinal axis; 2d, of the spinal nerves; 3d, of the cranial nerves; 4th, of the great sympathetic; and 5th, a parallel between the nervous system of the invertebral animals and that of the vertebral.

Independently of presenting under each of the foregoing divisions and sub-

divisions a very full and accurate account of the numerous facts and deductions for which we are indebted to the labours of those who have devoted themselves to the investigation of the structure and functions of the different portions of the nervous system, the author has endeavoured to test the results derived from experiments performed upon living animals by those derived from pathology—which constitutes, indeed, one of the most interesting and valuable features in his treatise. But, he remarks, we must candidly confess that, if in our study of the functions of the spinal marrow and the nervous cords, the results of experiments and those of pathology have been in entire accordance, they have, on the other hand, appeared not unfrequently to contradict each other when the functions of the encephalic mass have been the subject of our inquiry.

It will readily be perceived by any one tolerably acquainted with the physiology of the brain, that a large number of conclusions relative to the functions of that organ, rigorously deduced from the most exact and decisive experiments upon the inferior animals, will not hold true in reference to man, whose brain is much more perfectly organized, and in whom, between its different portions, there exists a union and consent of action much more intimate than even in those animals who in their organization resemble him the nearest. In consequence of this, it is seldom that in man one portion of the brain can be acted upon without the functions of the other portions of the organ becoming soon more or less disturbed.

Consequently, if we admit that the encephalon is composed of a number of parts or individual organs, of which each is appropriated to the accomplishment of a special act, it will be at once understood why the facts derived from its pathological changes have not furnished any other than plausible arguments in favour of the attempts that have been made to localize the cerebral organs. Nevertheless, so rich in facts is the pathology of the brain, that it is ready to loan them for the support of almost any system; and thus, according to the manner in which we proceed in its interrogation, will it conduct to doubt, to error, or to truth, in our attempts to determine the functions of the encephalic portion of the nervous apparatus.

It will not be expected that we should attempt a critical examination of the views, in relation to the several physiological questions embraced in the present treatise, which M. Longet advocates as those legitimately deducible from well established facts, nor shall we enter upon the laborious task of presenting an analysis of its contents. The chief interest and value of the work consists in the fact of its being itself a critical analysis of every thing of importance that has been advanced; and of the results of all the more important series of experiments that have been undertaken with the view of elucidating the structure and functions of the several portions of the nervous system. The observations and deductions of the author himself are certainly, in the majority of instances, in the highest degree, worthy of attention. His labours, however, have been principally directed to the establishment and more complete elucidation, or to the refutation, of the views advanced by preceding or contemporary physiologists.

The views of M. Longet, in regard to the development of the nervous system will be understood from the following propositions with which his chapter on that subject concludes. They will be found to differ somewhat from those taught by many of the leading authorities of the present day, but would appear to accord with the results of repeated minute examinations of the animal organism at the different periods of fetal life, and with what we know in relation to the laws of development and nutrition of the body generally.

“1st. No known relation exists primitively, in the embryo, between the cerebro-spinal axis and the nerves.

“2d. The peripheral portion of the nervous system is already very apparent when the central portion is scarcely perceptible.

“3d. In monsters the first is never found to be formed in the absence of the latter.

“4th. The development of the nervous system would seem to take place from the circumference towards the centre.

"5th. No one of the primitive points of the system can be regarded as a centre of irradiation.

"6th. The *nisus formativus* organizes each portion of the system in its place: there is a succession in their formation; but the one cannot be considered as an efflorescence from the other.

"7th. The gray portion of the nervous matter does not appear to exist previously to the white; the contrary would appear to be the fact.

"8th. The physiological laws which govern the nutrition of the system are decidedly opposed to the supposition of the gray matter being the organ by which the white is nourished: one solid substance cannot nourish another solid substance.

"9th. Before acquiring the permanent form which is proper to it, the cerebro-spinal axis of man presents, in its successive evolutions, very nearly the different forms of the same organ in the vertebral animals of the inferior classes."

The attention of the author appears to have been very particularly directed to establish the fact of the distinction of the special agents of sensation from those of motion. So far as regards the spinal nerves, the question M. Longet considers to be completely settled; but in regard to the encephalon, the question still remains in doubt, and we scarcely possess the elements necessary for its solution.

It is impossible not to regard the spinal marrow as a fundamental organ, of which the several fasciculi radiate into the encephalic ganglions, and, therefore, if we admit as proved that the posterior fasciculi transmit impressions, while the anterior transmit the principle of voluntary motion, it would seem rational to presume that, in tracing the individual cords of the spinal marrow into the brain, we should be able to determine the centre from which emanates the principle of motion, as well as that toward which converge the various impressions transmitted by the nerves. Stated in this manner the physiological problem, the solution of which has heretofore defied all our investigations, would appear to be extremely easy, and to resolve itself into a simple question of descriptive anatomy, of which a skilful hand should be able to give, sooner or later, a satisfactory exposition. But, as our author very correctly remarks, without denying the possibility of so important a result, there are many circumstances which augment very materially the difficulties in the way of its being attained.

"If anatomy demonstrates that each convolution of the brain is provided, independently of the gray substance, with two orders of fibres, the one motor and the other sensitive, derived from the spinal marrow, pathology, in confirming the fact, at the same time shows that in man the lesion of any one of the convolutions, no matter which, produces, most commonly, the loss or various disturbances of the motor power, and sometimes the abolition or disturbance of that of sensation. From this we may perceive all the difficulties which present themselves, in determining, by the aid of pathological facts, the central focus of sensation or of motion.

"With respect to vivisections, they are far from presenting, in the question before us, a more certain method of investigation. If we remove completely the cerebral lobes of a bird we observe it still to walk and to fly; it may even live for many months; and if its conjunctiva be touched, it turns away its head; if one of its claws be pinched, it withdraws it, &c. From these facts, therefore, we should conclude that the brain, properly speaking, is altogether unconnected with the functions of sensibility and of motion.

"If the cerebral lobes and the corpora striata be removed in a rabbit, it is still capable of standing and moving, and if its tail be pinched it utters cries; the conclusion is, therefore, the same as in the former case. If in the same animals the cerebellum be removed, sensibility, although probably perverted, is far from disappearing, and the movements of the body, although disordered, may still be produced. If, therefore, we depend upon the results of similar experiments made on the inferior animals, we cannot regard either the cerebrum or cerebellum as the exclusive centre of motion or of sensation.

"I have, nevertheless, in many instances, produced paralysis of movement in

the opposite side by destroying, even to a slight extent, one of the cerebral hemispheres. Every day we observe in man this form of paralysis result, as well from the lesions of the cerebrum as from those of the cerebellum. When one or other is the seat of disease, sensation itself may, also, be more or less deeply affected, which shows how cautious we should be in referring to one species of animals, a result obtained in reference to another species."

The views of M. Longet in regard to the structure and mode of transmission and action of the nerves, are in accordance with those of the most authoritative of the recent continental physiologists. He teaches that "the force which is transmitted by a motor nerve has no action or effect but in the direction of the primitive fibres which go to the muscles; that is to say, from the centre to the circumference, and never in the opposite direction." And that "the primitive fibres of several motor nerves, which unite to form a plexus or nervous trunk, exert their force individually throughout their whole length, the excitator force of the one never being communicated to the others."

This proposition, which excludes all idea of analogy between the anastomoses of the blood-vessels, and the supposed anastomoses of the nerves, the latter being viewed as a simple separation of one or several independent nervous fibres from one nervous trunk, in which they had been associated with other fibres, to pass to a neighbouring trunk, and along with the fibres contained in the latter to proceed to their point of destination, although not admitted by all physiologists, would appear, however, to be very fully established by the results of numerous cautious examinations. It is impossible to conceive, unless we admit the entire and complete independence throughout of each primitive nerve, how any local nervous action could take place, either when transmitted from the encephalon to the peripheral organs, or from the latter to the former.

In the same manner, as in the nervous anastomoses there is simply a juxtaposition of primitive fibres, arriving from different points, so also in the nervous plexus there is merely a juxtaposition, a change of relation between different fasciculi or nervous cords to give place to new combinations. The anastomoses as well as the plexuses being destined to concentrate the action of several different nerves upon one organ.

M. Longet presents a most interesting and instructive view of the structure of the different portions of the encephalon—and investigates with much caution the various hypotheses that have been advanced in relation to the functions of each, with a critical analysis of the facts upon which these hypotheses are respectively based. In his labours upon these important points we are unable to follow him.

To the views of Gall in relation to the unfolding of the convolutions of the cerebrum, M. Longet is decidedly opposed.

"The idea," he remarks, "of a similar unfolding of the cerebral convolutions seems to have suggested itself at an early period to the minds of anatomists, judging from the following passage in the discourse of Steno on the anatomy of the brain (1688): 'You will find some who would even pass off the substance of the brain for a membrane.' Let this, however, be as it may, it is certain that no other author has attached so much importance to the pretended demonstration of the unfolding of the convolutions as Gall. The latter considers it to be one of his most important discoveries.

"According to his view each convolution consists of two fibrous layers, of which the internal surfaces are only attached the one to the other, by means perhaps of a very loose and delicate cellular tissue, without there existing between them any positive union or intimate adhesion by the communication or reciprocal transmission of fibres from the one to the other." It is upon this formation of the convolutions that he predicates the possibility of their expansion by disease or by art.

"In hydrocephalus, according to the German anatomist, the two fibrous layers of the convolutions are gradually separated from each other, until they become absolutely horizontal, in place of vertical. Let us examine the value of this argument. Cuvier assures us, that in hydrocephalus, the prominence of the convolutions is effaced, and that their medullary matter is diminished in

thickness, without, however, any unfolding of the convolutions taking place. The parietes of the ventricles, he adds, although distended, have the same appearance as usual. In the dropsy of the kidneys, the substance of these organs becomes distended and thinned, to the extent of causing them to assume the appearance of a membrane, without any one having been led to imagine that the substance of the kidneys had become unfolded. From his own observations M. Cruveilhier also affirms that in hydrocephalus, the convolutions of the brain are not unfolded, but atrophied, flattened and compressed one against the other. The anatomical phenomena observed in this affection, do not, therefore, constitute such conclusive proofs in favour of the opinion of Gall, as he has imagined. With respect to the physiological phenomena—instead of the continued integrity and activity of the intellect which Gall asserts that he observed in the single example of hydrocephalus he reports, there is, on the contrary, as is notorious to every observer, feebleness of intellect in those patients who are affected with the disease even in a slight degree—resulting from the pressure of the effused fluid upon the convolutions, the impediment thus presented to the circulation through their vessels, and their consequent atrophy. The opposite condition—in other words, the preservation of the intellectual functions,—should be the state generally observed, and not the exception, if it were true, as maintained by Gall, that hydrocephalus, even of considerable extent, is developed without any modification taking place in the intimate structure of the hemispheres of the brain ‘without any forced distension of their fibres,’ and in consequence of a simple unfolding of their two fibrous layers—in fact, by a change in their direction, but one, according to Gall, compatible with the free exercise of their functions.

“The argument drawn from the example of the hydrocephalic brain, is not the only one which Gall adduces in support of his opinion of the possibility of unfolding the cerebral convolutions;—he asserts that he has effected artificially what takes place in the disease referred to. Cuvier, in blowing upon a portion of one of the convolutions boiled in oil, saw it separate, not only on the median line or that of the union of the two pretended layers, but also upon the sides; a phenomenon which is readily explained by the natural division of the white matter of the convolutions into an infinite number of laminæ, which are now admitted to exist instead of the two layers of Gall.

“It seems utterly useless to detail here the manner in which the latter proceeds in unfolding artificially the convolutions of the brain. I prefer to demonstrate at once the fatal blow which he has himself given to his own theory. The latter, as we have seen, consists simply in pretending that the whole of the cerebral hemispheres may be unfolded into a membrane. Now observe the words of this author: ‘The fibres of these fasciculi, thus spread out in the convolutions, *have not all the same length*; the shortest terminate immediately outside the parietes of the ventricles, at the bottom of the anfractuositities; the longest continue further on side by side to the summit of the convolutions. It is thus that are formed various prolongations and various depressions (convolutions and anfractuositities) according to the greater or less length of the fibres.’ By admitting the entire accuracy of these assertions of Gall, it is very easy to show that the unfolding of the whole of the convolutions or the cerebral hemispheres, is in the very face of these assertions, a thing absolutely impossible. To demonstrate this we may be permitted to make use of a somewhat rude comparison. Let us imagine to ourselves a balloon distended by gas, the surface being undulated by a number of threads of unequal length proceeding from a central stem and attached to the internal surface of the portions of the balloon—the longest threads proceeding to the summit of the undulations and the shortest to the depressions between them. Now it must be evident that if we would unfold a balloon thus circumstanced, so as to destroy the undulations upon its surface, the first thing to be done would be to cut or break the shorter threads—in the same manner the pretended unfolding of the brain cannot be effected, but by the rupture of at least all the shorter medullary fibres—that is, all those which, according to Gall’s own description, terminate at the bottom of the anfractuositities.”

The whole of the chapter which treats of the structure and functions of the cerebrum is rich in facts, drawn from the numerous minute and diversified observations which this important division of the nervous system has elicited. Of every thing known in relation to it and of almost every thing conjectured in reference to the functions of its different parts, M. Longet has given a very interesting and satisfactory notice. But we dare not attempt to follow him in his exposition of the anatomy and physiology of what he denominates "the chief head and governor of the remainder of the cerebro-spinal axis—the throne of the superior faculties, which place man in so elevated a rank in creation, and which so nobly distinguish him from all other animals."

The following *résumé* of the researches of M. Leuret upon the comparative disposition of the convolutions in the different classes of animals may, perhaps, be new and interesting to many of our readers.

1. The brains of the most part of the mammifera are provided with convolutions.

2. Those of the mammifera in which the convolutions are wanting all appertain to those orders in which the organization is the least perfect.

3. The mammifera may be classed according to the similitude of their cerebral convolutions.

4. The classification founded upon the similarity of the convolutions, brings together those animals which resemble each other in their mental faculties, while it separates those in which these faculties are different.

5. The cerebral convolutions present many very distinct types. Nevertheless, we are able to follow the transition of one type into another through the intermediate gradations.

6. In three animals, the elephant, the maki, and the monkey, the convolutions of the brain have an analogy to those of the human brain, and not to that of other animals.

7. The presence and development of the convolutions have no direct relation with the volume of the brain; although it is generally the case that the larger the brain the more numerous, and especially the more undulated are the convolutions.

8. In the fox, the wolf, the dog and the jackal, the convolutions are extremely simple.

9. In the cat, the convolutions are similar in number to those of the preceding animals, but they are united the one to the other at several points.

10. In the bear, the coati, &c., they are still more united, and present a number of peculiarities in their details.

11. In the ruminating herbivorous animals the cerebral convolutions are less simple and more undulating than those of the carnivora, and resemble, very closely, in their general aspect those of the human subject.

12. The hog and the bear, have each, in a different manner, a brain which indicates a state of transition between the carnivora and herbivora.

13. The brain of the seal approaches in form that of the hog—while the brain of the dolphin, of the porpoise, and of the whale approaches that of the herbivora.

14. Of all the mammifera, the elephant and the whale have the largest and most undulating convolutions; but the elephant is placed above the whale by the possession of convolutions which are found also in the monkey and even in man.

15. It is in the mammifera, the most intelligent, that we find the brain the most undulated—but this is not true in regard to all the intelligent animals of this class.

16. Neither the presence of the convolutions, their number nor their form indicate in any positive manner, the number and extent of the faculties of the mammifera.

17. The extent of the cerebral surface has no necessary relation with the development of intelligence.

18. According to the general form of the convolutions, the brain of the mammi-

fera may be divided into three groups. In the first are placed the convolutions without flexure, those which are separated from each other by regular lines, straight or curved. These appertain exclusively to the carnivorous mammifera. In the second group, are placed the undulating sinuous convolutions, which at first view resemble very nearly those of the human brain. These appertain to all the solipedia and to all the ruminantia—animals that live solely upon vegetable substances. They appertain to the elephant, which is exclusively herbivorous, and are found also in the cetacea and the amphibia, animals of which some feed upon vegetables, but the most part on fish. Finally, in the third group, are ranged the family of bears, that of the marten and that of the hog, omnivorous animals, the convolutions of whose brains are both sinuous and non-sinuous.

Upon the labours of M. Leuret our author remarks—

“That even according to the researches of this gentleman, we cannot avoid recognizing a very intimate relation between the presence or absence of the cerebral convolutions as an organic condition, and the development of intelligence. In fact, the brains of the lower order of animals never present any convolutions, while in those of the higher orders they are invariably present—and in the elephant, of all the animals inferior to man the most intelligent and docile, the cerebral convolutions are the most numerous, and approach the nearest to those of the human brain.”

M. Longet admits, as a necessary deduction from the most numerous series of observations and experiments—a deduction borne out by all the facts in our possession whether direct or analogical, that in the cerebral lobes especially exist all the material conditions of the intellect, of the sentiments and of the instincts; that the number and perfection of the intellectual faculties, in the several species of animals as well as in the individuals of the same species, would appear to be in direct proportion with the extent of the cerebral surface, which is materially influenced by the number and depth of the convolutions; and still further he admits that the doctrine of especial and distinct organs, existing in the cerebral hemispheres, appropriated to each faculty of the mind, and to the different moral and instinctive qualities, is neither impossible nor improbable. He at the same time denies that its truth has as yet been demonstrated, and maintains that all attempts that have been heretofore made to localize the different organs of the intellectual, moral, and instinctive faculties have entirely failed.

The modern phrenological doctrines he rejects, and attempts to show that they are entirely unsupported, and even contradicted in many points, by the facts furnished from the pathological conditions of the brain—from direct experiments, as well as by the deductions drawn from comparative anatomy—under this latter head his arguments are entirely derived from the memoir of M. Lafargue, a notice of which we gave on a former occasion. (See vol. xxiv. p. 168.)

The anatomy and physiology of the nerves as well encephalic as spinal, are considered at great length, and the recent investigations in relation to the true structure and functions of each detailed with perfect clearness and accuracy.

The great sympathetic nerve, as it has been termed, receives, of course, all the attention which is demanded by its importance, as the source of innervation to the whole of the organs of the circulatory and nutritive systems; the very great discrepancy and confusion in the opinions that have been entertained in regard to its true character and office, and the degree of mystery in which almost every question in relation to it has been involved by the contradictory results of the experiments that have been undertaken with the view of elucidating its character and functions. We regret that the limits to which we are restricted will not permit us to present a very full analysis of this portion of the work before us.

M. Longet, in treating of the structure of the great sympathetic, does not hesitate, as he remarks, to adopt the opinion of Bichat, that it is not a continued or independent nerve formed by primitive fibres proper to it alone.

“I have frequently,” he declares, “recognized, on the thoracic portion of this nerve, after depriving it of its neurilema, that the roots or *external branches* of each ganglion, on arriving at that particular ganglion, divide themselves, within its substance, or upon its surface into three orders of filaments; the one, ascend-

ing, unite with the filaments which descend from the ganglion above, the other, descending, unite with the filaments which ascend from the ganglion below, while the third order of filaments constitute the *internal branches* or the visceral. From this arrangement of nervous filaments there results a continued series of nervous loops, presenting, at irregular intervals, masses of gray matter, which often insinuates itself even into the external, internal and anastomotic branches of each ganglion. Now, the branches which unite together the ganglions, do not form a continuous nerve—they merely pass from each pair of cervical, lumbar or cervical ganglions to the two pair immediately above and below. Thus we regard the trunk of the great sympathetic only as a non-interrupted series of anastomotic arcades, which arcades are formed by the union of a certain number of cerebro-spinal filaments intermixed with gray matter.

“Each ganglion communicates either with the two orders of roots of the spinal nerves, or, at the same time, with the cranial nerves of motion and sensation.

“We recognize, therefore, in each ganglion, one or more *motor* and *sensitive* roots,—one or more *sympathetic filaments*, to unite with the neighbouring ganglions,—and *sensitive* and *motor* fibres, which pass to the mucous surfaces, to the glandular organs, and to those contractile tissues which act independently of the will.

“It is not demonstrated that any special fibres arise from the ganglionic globules.”

After adducing all the facts which demonstrate the composition of the great sympathetic to be such as is above described—and showing that sensations are conveyed, under particular circumstances, to the encephalon, through its sensitive fibres, and that its motor action upon the muscles of organic life is incontestably established, M. Longet examines the question as to the sources of activity of the great sympathetic.

He attempts to prove, and we consider that he has succeeded in proving, that the great sympathetic, when isolated and deprived of all connection with the cerebro-spinal apparatus, is totally incapable of fulfilling its important functions. After citing the facts drawn from direct experiment and from pathology, which bear upon this question, M. Longet remarks—

“These facts are far from confirming the opinion that regards each ganglion as a little nervous centre which acts independently of all relation with the cerebro-spinal axis. Nevertheless, I do not believe that we are warranted in denying to the ganglionic tumours, so rich in gray matter and in blood-vessels, an active co-operation as centres of innervation, (the example of the amyelencephalous fœtuses proves the contrary). We are, however, obliged to admit, that in the adult their action alone is insufficient to keep up the functional activity of the nerve.”

In the ensuing chapter the facts are adduced which prove that the great sympathetic and the cephalo-rachidian nervous system reciprocally influence each other. For, although these two nervous apparatuses counterbalance each other so exactly, that neither encroaches upon the domain of the other—whence results the harmony of action that constitutes the state of health—yet, when this equilibrium is from any cause destroyed—the action of the one assumes the ascendancy, and functional disorder or more or less serious disease is the consequence. Thus, every sudden change occurring in the central organs of the nervous system, by reacting upon the fibres of the great sympathetic, is liable to produce a diseased action in the organs supplied by the latter with nervous influence. On the other hand—

“An impression somewhat intense, emanating from those organs to which the great sympathetic is distributed, may, in its turn, become transmitted to the brain or spinal marrow, and give rise to a reaction in those parts of which the innervation is derived from the cerebro-spinal nerves. It is thus that the irritations of the intestinal canal, in children, give rise to convulsions, that eclampsia in many cases follows almost immediately upon the occurrence of the first pains of parturition, and that occasionally the accessions of hysterical con-

vulsions is announced by severe pains in the uterus, the ovaries, the solar region, &c. We may also notice the spasms of the respiratory muscles which accompany the act of vomiting, when the latter is provoked by irritations of the intestinal canal, the kidneys, uterus, &c."

M. Longet denies that the ganglions of the great sympathetic possess a power of determining reflex nervous action similar to that of the spinal marrow.

In regard to the all-important question, why is it that the movements over which the great sympathetic presides, are executed independently of, and are entirely uninfluenced by the will—M. Longet offers the following solution, as that deducible from the composition of the sympathetic, as well as from all the facts that have been established in relation to its mode of action:—

"When," he remarks, "we study with great care the spinal roots at their origin, we recognize, that, among the radicular fibres, anterior as well as posterior, some are continuous with the white fibres of the spinal cord, while others plunge into its gray substance. The first, which proceed with the medullary fasciculi to the encephalon, and even to the lobes of the cerebrum, are unquestionably destined, as well as the medullary fasciculi themselves, for the transmission of impressions, and of the principle of voluntary motion. With respect to the second, which are arrested in the gray substance—so well organized for the production and not for the transmission of nervous influence—is it not rational to regard them as the originating fibres of the great sympathetic—as those which derive from the gray matter of the spinal cord the incitation which the latter transmits to the ganglionic nervous system? From this view it is easy to understand the intimate connection between this system and the spinal marrow—to explain why the movements effected under the influence of the great sympathetic are involuntary, and why the centripetal incitation which it transmits should be dispersed in the gray matter of the spinal cord, in order to excite the production of nervous force without the intervention of the will in any of its acts.

"Let us apply this theory to one of the abdominal ganglions, for example, which, the same as all the others, are each traversed by sensitive and motor fibres emanating from the gray matter of the spinal cord. An impression is made upon the mucous surface of the small intestines, and passes, through the ganglionic body, along the sensitive fibres, to the gray matter of the spinal marrow. The latter, in consequence of the stimulation thus received, furnishes the nervous motive power, which augmented by that of the ganglion, is transmitted, by the motor filaments, to the muscular fibres of the intestines, which in consequence react and contract. It is evident that in this case nothing reaches the cerebral lobes or the organs of volition.

"The involuntary movements under the domain of the great sympathetic, may be performed with regularity for some time after a part is completely separated from the body. The heart removed from the thorax of a living animal will still beat for a long time—the contractions of the heart of some of the reptiles will continue for many hours after its removal. The peristaltic movements of the intestinal canal will also continue after separation from the body; and the oviduct of a tortoise has been seen to eject its contents subsequent to its excision. The nervous filaments which penetrate the contractile tissues, do not in such cases develop of themselves the nervous force, but allow the contractions to take place only during the period necessary to expend the nervous power which they held in reserve.

"If the parts endowed with involuntary motion, as the heart and intestinal canal, preserve for some time after they are separated from the body, the type of their rhythmic or peristaltic movements, it is therefore evident that this type is independent of the brain and spinal marrow, and that it should be referred to a current of the nervous principle acting periodically through the grand sympathetic. In this case, even the ganglionic plexuses and the ganglions themselves are unnecessary to the maintainance of the type of the involuntary movements. Contrary to the assertion of M. Brachet, I have always observed in the mammifera, (dogs, cats, and rabbits) the heart when placed upon the table, to still

contract periodically after I have cut away the base with the cardiac plexus and ganglionis—that is to say, after the ablation of the auricles on a level with the ventricles. Müller makes a similar observation in reference to the heart of the frog. It is necessary, therefore, to admit, that the terminal ramifications of the great sympathetic may, even after death, (?) regulate the involuntary movements, by expending that nervous influence which they receive periodically and with more or less rapidity.

“Another remark may be made in reference to the movements placed under the control of the great sympathetic, showing a slight difference between it and the nerves of relation. If an irritant, whether chemical, mechanical or galvanic, be applied to one of the cerebro-spinal motor nerves, sudden contractions of the parts to which it is distributed, are excited, which contractions occur and cease, with the rapidity of lightning. But, if the same irritant be applied to either of the divisions of the great sympathetic, no motion is produced until after some seconds have elapsed, and it does not arrive at its maximum of intensity until after the irritant has been removed. Thus, in the one case, the contractions commence and cease with the irritation, while in the other, they do not commence until some time after the irritation has been excited, and continue after it has ceased. These results would seem to prove that the movement of the nervous principle is slower in the great sympathetic than in the cerebro-rachidian nerves, or, in other terms, that the first is not so good a conductor as the latter.

“Before terminating the study of the peculiarities connected with the movements under the control of the sympathetic, I may remark, that the most part of those also, which are under the influence of the accessory nerve of Willis, are equally subtracted from the empire of the will, and that there exist incontestable analogies between these two nerves. The experiments of Bischoff, as well as my own, leave no doubt as to the pneumogastric nerve, properly so called, being exclusively a nerve of sensation, while the office of the accessory or spinal, which anastomoses with it, is alone to preside over the contractions of the muscles of the pharynx and larynx, and the muscular membranes of the trachea, bronchi, œsophagus and stomach—while it extends its influence even to the heart. Now, all are aware that the will exerts no influence upon the movements of the greater part of these organs—If, we may remark, the great sympathetic arises by a number of roots from the whole length of the spinal cord, the accessory nerve derives its origin from a portion of the rachidian axis of considerable extent (the cervical portion). It therefore does not appear to me to be difficult to refer the analogy in the motive power of these two nerves to the analogy which exists between them in regard to the manner in which their origin from the nervous centres takes place. My conviction on this point becomes the more positive, from the fact that of all the cerebro-spinal nerves, the accessory alone presents this uncommon mode of origin, and that it is the only one of them that presides over movements subtracted from the influence of the will. I may add, that, in galvanizing the mixed trunk of the spinal nerve (the accessory and pneumogastric,) I have observed, as in the case of the great sympathetic, that the motive reaction does not take place until after some instants of time, and that it does not attain its maximum of intensity until after the irritating cause has been removed. These observations have been made upon the bronchial ramifications, and those of the œsophagus and stomach of large animals, as the horse and ox.

“The accessory nerve of Willis may, therefore, be regarded as establishing a transition between the cerebro-spinal nerves and the great sympathetic—on the one part, it is distributed as a nerve of motion, to muscles of animal life (those of the larynx, &c.) as well as to those of organic life (the contractile coats of the bronchi, œsophagus, stomach and heart,) while on the other part its mode of origin resembles that of the great sympathetic.”

We could extend our remarks upon the materials embraced in the work of M. Longuet, to treble the space we have already occupied, as well as multiply our quotations from its different chapters, with great satisfaction to ourselves, and to the profit, we are convinced, of our readers. But our limits will not permit this

indulgence—and even if they did, we could scarcely afford, within a reasonable space, any thing more than a very general view of the manner in which the author has fulfilled his task.

Without admitting that all the opinions he has emitted in relation to the structure and functions of the nervous system are incontrovertible—his work may, nevertheless, with great confidence, be recommended to the particular attention of the student of this important portion of physiology. He has unquestionably collected and collated with great industry, and in general with the most perfect impartiality, every thing of importance in relation to it, while he has arranged his materials in a manner well adapted to communicate clear and distinct views upon each of the topics embraced in the general subject of which he treats.

Some very beautiful and interesting lithographic plates accompany the work—illustrative of the form and structure of the brain and spinal marrow, the form and relation of their several parts and the mode of origin, &c. of the different sets of nerves.

D. F. C.

ART. X.—*Traité complet de l'Anatomie, de la Physiologie, et de la Pathologie du Système Nerveux Cérébro-spinal.* Par. M. FOVILLE, Médecin en chef de la Maison Royale de la Charenton, &c. &c. Première partie. Anatomie—avec un atlas de xxiii planches. 8vo. pp. 676. Paris, 1844.

A complete Treatise on the Anatomy, Physiology, and Pathology of the Cerebro-spinal Nervous System. By M. FOVILLE, Physician in Chief to La Maison Royale de la Charenton, &c. &c. Part 1st. Anatomy—with a quarto atlas containing 23 lithographic plates.

It is only within a very few years past, that any thing like correct views in relation to the structure and arrangement of the different portions of the nervous system have been fully developed. Notwithstanding the nervous centres, and principal nervous trunks have been made the subjects of repeated and laborious investigation, from a very early period, and by the most skilful anatomists and physiologists—but slight advances were made, until lately, towards a knowledge of their intimate structure. The attention of the investigator, with few exceptions, was almost exclusively confined to the form and superficial appearances of the brain and spinal cord, and to the general distribution of the principal nervous cords, which have unquestionably been described by the older anatomists with great minuteness and accuracy.

A few of the earlier anatomists made, it is true, considerable advances towards determining the arrangement and course of the nervous fibres in the spinal marrow and brain—and had the important facts developed by them been followed up with industry and care, the discovery of the real structure of the nervous masses, and of the functions of their different parts, as well as of the several classes of nerves which pass to and from them, would certainly not have been left to the anatomists of the nineteenth century.

A careful study of the works of Varolius, Sylvius, Willis, Malpighi, Bartholin, and several of their contemporaries of less note, will show how many of the views in regard to the intimate structure and composition of the brain and spinal cord, usually referred to as the results of recent investigation, were, in fact, fully anticipated by the labours of the anatomists just named—Labours, that in consequence of their true value either not being fully appreciated, or intentionally overlooked, by succeeding cultivators of the same field, were for a time forgotten, and have now only been recalled, after their importance had been very satisfactorily established by minute and repeated examinations of the nervous centres,—undertaken, in many instances, evidently without the slightest knowledge that the same work had already been performed.

It is to the labours of Gall and Spurzheim, that we are mainly indebted for the renewed attention that has been paid during a few years past, to the study of the anatomy, and physiology of the cerebro-spinal nervous system, and for the very rapid advances that have, in consequence, been made, in perfecting our knowledge of this important and truly interesting portion of the animal organism. They have indicated with great clearness, the true principles upon which the investigation of its intimate arrangement and composition was to be successfully conducted; while, by their writings and oral instructions, as well as by the novelty and ingenuity of many of their doctrines, they have given an impulse to the more minute and accurate study of every portion of the nervous apparatus, which has already been productive of the most important results—and of the ultimate fruits of which we can form no correct anticipation.

The renewed interest with which the anatomy and physiology of the cerebro-spinal masses have become invested, has, as might have been expected, given birth to numerous publications, of more or less value, in relation to the subject. Among these, the treatise of M. Foville will unquestionably command a very high rank. The author has devoted many years to the investigation of the structure and functions of the nervous system, and under circumstances peculiarly favourable to arriving at positive and accurate results.

The volume before us, which forms the first part of what is intended to be a complete and extended treatise on the anatomy, physiology and pathology of the cerebro-spinal system in man, furnishes a minute description—founded on the personal observations of the author and his friends—carefully compared with those of his predecessors and contemporaries in the same field of inquiry—of the form, arrangement and superficial appearance of the several portions of the encephalic and spinal nervous masses—as well as of their intimate structure and arrangement—of the course, arrangement and connection of the nervous fibres which enter into their composition, and the relation which exists between the several portions of the nervous centres and the nerves which proceed to or pass from them. Together with a full account of the crano-spinal osseous envelope of the central nervous masses—more especially directed to establish the precise relation which the different portions of the brain bears to the several external regions of the skull—as well as to point out more clearly the serious evils that result from every species of confinement or compression to which the head may be accidentally or intentionally subjected in early infancy.

To the treatise is prefixed a very full and peculiarly interesting sketch of the various opinions that have been entertained by the more distinguished anatomists and physiologists from the earliest periods in relation to the different portions of the nervous system—embracing a succinct analysis of the principal publications that have appeared upon the subject. This historical introduction, which is ably and fairly drawn up, presents an instructive and satisfactory view of the gradual steps by which the knowledge of the true structure of the nervous centres has been attained, while it proves, also, the little claims to originality possessed by many of the views that have been developed by the labours of the more recent investigators.

Every part of the work bears unquestionable marks of close observation and of perfect accuracy in all the more important details—while the drawings by which the descriptions of the author are illustrated, surpass in truth, clearness, and beauty of execution any of a similar character with which we are familiar.

The anatomical description of the cerebro-spinal masses by M. Foville, we may remark, in conclusion, possesses a character and importance which will render its careful study essential on the part of all who would become fully acquainted with the *structure* as preliminary to the study of the *functions* of the nervous apparatus.

D. F. C.

ART. XI.—*Mémoires de la Société Médicale d'Observation de Paris.* Tome deuxième. Paris, 1844.

Memoirs of the Medical Society of Observation of Paris. Second volume. Paris, 1844. pp. 596.

MORE than six years have elapsed since the publication of the first volume of these Memoirs; but we must not, therefore, conclude, we are told by the writer of the preface of the present volume, M. Valleix, that the labours of the society have been either discontinued or remitted. The great object of the society, from the time of its foundation, about twelve years since, has been the gradual accumulation of material of undoubted value, which should first be subjected to a rigid scrutiny, and afterwards analysed with the view of obtaining general results, which could be made known to the profession in the form of memoirs, such as those contained in the volume before us, and for the preparation of which much time is required. In collecting and comparing facts, the assistance of numbers is invoked, and a considerable part of the preface is occupied in the refutation of some of the objections which have been made against the employment of numerical analysis. The best proof of its value is to be found in the many valuable results to which it has led, and in the fact that it is steadily gaining ground in the estimation of medical men, as evinced by the much more frequent appeal to numerical statements, with the view of attaining to positive conclusions. But it is not merely in the employment of numbers as an assistant in analysis that the Society of Observation has found opponents. It has been said that we have already histories of cases in abundance; and in reference to a certain kind of histories, this is certainly true. The society, however, demands that the cases presented to it should be detailed and accurate, and where deficiencies are observed, they are rigidly criticised; its members are constantly reminded of the necessity of the most scrupulous accuracy in the investigation of every point, and until the cases reported by them evince a sufficient evidence of the proper requisites, they are not admitted into its archives. The society is of the mind that the observing and reporting of cases, as well as their analysis, is a work which demands not only certain mental requisites, but a long practical training for its proper accomplishment. Like the experiments of the natural philosopher, or the complicated analysis of the chemist, it demands for its performance a familiar acquaintance with the objects upon which it is employed, in order to inspire that degree of confidence, which is necessary before we can employ the data afforded, as the basis of scientific reasoning. Of such data the society thinks that there is a great deficiency, which it is of the last importance to supply; and in this respect, also, the correctness of its views is daily becoming more and more apparent, the silent acknowledgment of it being found in the fact, that everywhere there is a tendency to approach the standard which the society has erected. Every one, says M. Valleix, feels, in spite of himself, that more attention and accuracy must be brought to bear upon the study of cases. The society, therefore, finds no reason to relax its efforts; but, on the contrary, every inducement to prosecute its object, which is altogether one of utility. Several memoirs are in course of preparation, so that the forthcoming volumes will not be so long deferred. The present volume contains four memoirs, the first of which is by M. Louis, being an account of the yellow fever of Gibraltar of 1828, now first published in the original. A translation by Dr. Shattuck having been already published in this country, and reviewed in this journal, we shall not further allude to it here.

The second is by M. Valleix, and entitled, "*Researches in reference to the frequency of the Pulse in Newborn Infants, and in those aged from seven months to six years.*" Before detailing the result of his own experiments, Dr. V. gives a short account of the general state of the question, and of what has been done by other experimenters. It is generally stated by authors, that the pulse in infancy is very frequent, and that this frequency diminishes as individuals advance in life. The mean frequency

in new-born children is usually represented as from one hundred and thirty to one hundred and forty; whilst at the age of one year it is reduced to one hundred and twenty. A few years since Dr. Gorham published in the London Medical Gazette an account of some experiments, by which he found that the mean frequency in the first twenty-four hours after birth was one hundred and twenty-three; from this time to the end of the first week, one hundred and twenty-eight; after which it increased more rapidly, the mean frequency from one to five months, being nearly one hundred and forty-nine, whilst from this period to the end of the second year it fell to one hundred and thirty, after which it went on diminishing. The experiments of our author accord with those of Dr. Gorham in this, that the pulse in very young infants is much less than at the age of six months. But Dr. Valleix estimates the absolute frequency within the first three weeks considerably lower than has been done by Dr. Gorham, viz., at eighty-seven. From the seventh to the twenty-seventh month, he places the mean frequency at one hundred and twenty-six, which is also rather lower than that found by Dr. G. It is to be recollected, however, that in the first series, where the pulse was found to be eighty-seven, the children were asleep, a state which is shown to have a positive influence in diminishing its frequency. Making allowance for this circumstance, our author thinks that the mean frequency of the pulse in very young children should be set down at between ninety and one hundred. The difference between these results, and those of preceding writers, he attributes to the circumstance that the latter have not examined the pulse when the infant was as near as possible in a state of perfect repose, or properly estimated other incidental circumstances capable of influencing the result. Thus he found that the least movement, fretfulness, or other mental emotion, sensibly increased the number of pulsations. An increase of the temperature of the room of a single degree was found uniformly to increase the frequency. Like Dr. Guy, our author found that the pulse was more frequent early in the morning than later; but as the children were all examined after breakfast, he thinks that this result must in a great measure at least be attributed to the influence of the morning meal, the acceleration caused by which would diminish as the morning advanced. None were examined at a later period of the day, so that it is doubtful whether the results before us really confirm those of Dr. Guy or not. The influence of sex was found to be very decided, the pulse in girls being considerably more frequent than in boys.

Having thus noticed some of the principal results obtained by M. Valleix, without, however, entering into detail, or attempting to give the reader any idea of the labour which the minuteness and accuracy of the experiments, and the estimation of the various influences affecting the general result involved, we pass on to the third memoir, by M. Ducrest. This is entitled, "*Researches in reference to a bony production upon the surface of the cranium in women who have died in child-bed.*"

This accidental production consisted of a thin layer, which, in its earlier stage, was analogous to cartilage, and at a later period presented the consistence of bone. It was especially met with on the internal surface of the cranium, at its anterior and superior portion, sometimes in patches, which, at a later period, became continuous, forming more extensive layers. In the more advanced stages, the base of the cranium became the seat of the disease, but was never so extensively covered as the vault. It was found in eighty out of two hundred and thirty cases of women who had died in child-bed, whilst in the crania of seventy-one individuals, under other circumstances, no traces of the lesion were met with. It seems, therefore, sufficiently clear that the pregnant or puerperal state, or the diseases supervening in the course of the latter, are principal elements in its production. The puerperal state alone appears insufficient to account for it, for in several, death took place within a few hours after delivery; and it seems impossible to suppose, as M. Ducrest observes, that broad cartilaginous plates could have been formed, and become encrusted with earthy salts in three hours. The same objection, says M. Ducrest, is in part applicable to the supposition, that it was a consequence of the diseases of which the pa-

tients died. Peritoneal inflammation was present in the great majority of cases, and how far the same epidemic constitution may have been concerned in the production of the lesion in question, it seems impossible to determine for want of other data with which to institute a comparison. The presence of this matter in the cranium does not appear to have influenced materially the course of the puerperal disease just mentioned, or to have given rise to any symptoms by which the period of its formation could be determined, or even its existence be presumed. At present it comes before us in the light of a curious fact deserving of attention, but requiring further observation to determine its causes as well as the degree of importance which is to be attached to it. M. Ducrest appears inclined to admit that the state of pregnancy may be a principal cause. To settle this question, a sufficient number of crania of those who may, from various causes, die previous to delivery, should be examined.

The last memoir is by Dr. Fauvel, and entitled, "*Researches in reference to Suffocating Capillary Bronchitis (Suffocating Catarrh) in both Infants and Adults.*" The term Capillary Bronchitis, says our author, is at present employed to designate one of the diseases formerly confounded under the title of Suffocating Catarrh. After giving a separate consideration to each of the symptoms presented in the cases, twenty-seven in number, upon which the memoir is based, M. Fauvel proceeds to give a general description of the onset and course of the disease. Eight of the cases were children, and the remainder adults.

Save in a single instance, it was preceded for a longer or shorter period, by an ordinary bronchitis, upon which it was engrafted, sometimes suddenly, at others more gradually. Its commencement was marked by excessive dyspnoea, anxiety of countenance, pain under the sternum, and frequency of pulse. Once established, the phenomena of the disease were so characteristic as to give to it a peculiar physiognomy. These phenomena are separately described, according as they were met with in children or in adults.

In children the face was pale, with a violet tinge, especially about the lips; the eyes seemed prominent, the countenance was extremely anxious, and the nostrils much expanded at each inspiration. The respiratory movements were frequent, and the thorax strongly dilated. From time to time the respiration became noisy, stertorous, which stertor disappeared as expectoration came on. This probably took place about the third or fourth day, except in three cases, when it never came on at all; was painful and small in quantity, the matter expectorated being composed of a thick, yellowish-white substance, without air bubbles, and of stringy mucus, sometimes frothy and streaked with blood. The voice was natural, speech short and broken. The older children complained of a lacerating pain under the sternum during the cough, and also of a sense of weight which prevented respiration. The pulse was very frequent; the skin dry, burning, and presenting more or less of the same violet colour as the face; the thirst intense; the intellect undisturbed; the tongue and digestive functions but little altered; the appetite gone, and the bowels mostly constipated. Such is an abstract of the principal features of the first stage, as given by our author, who goes on to say that "the strength of the patient becoming exhausted by the constant muscular effort to overcome the impediments to the entrance of air into the lungs, the respiratory movements became less powerful, and even progressively slower, the cough less vigorous, and the expectoration more difficult. The respiration became more embarrassed, and more uniformly stertorous; the face assumed a dull leaden colour, the violet tinge becoming more marked about the lips, cheeks, and over the whole surface of the body. The conjunctiva became injected, the look fixed and expressive of extreme terror. When the patients were approached they expressed their fear by cries and disordered movements. Those among them who were strong enough to sit up, avoided lying on the back, and assumed the most singular positions, bending themselves forward, lying flat on the belly, or letting the head hang over the bed, and sometimes attempting to get down." The pulse became more frequent and less strong; the heat of skin diminished, its dryness at times giving place to perspiration. The restlessness of the early stage gave place to a steady

somnolence, in the midst of which were heard, at short intervals, plaintive groans or harrowing screams. Sometimes a fit of coughing or other circumstance would arouse the patient and bring back the violent efforts of the first stage, but this was of short duration; the somnolence and stertor returned, and so on till death. Auscultation discovered, in the early stage, a fine, dry, sub-crepitant râle throughout the whole or a greater part of the chest; a râle of larger size being mixed with the first, opposite the large bronchial tubes. In the second stage the fine sub-crepitant râle was still heard at times during the cough, but in general had given place to a sort of scraping (*raclement*) or dry mucous râle, or lastly, different sorts of sonorous râle. The percussion throughout was normal, or clearer than natural.

Such are the principal phenomena of the disease as it presented itself amongst children. In adults they were strikingly similar.

Of the children, seven out of eight died, the duration of the disease in the first being between five and eight days. The duration was about the same amongst the adults who died, but the number of deaths amongst them was much smaller, being ten only out of nineteen. In those who recovered the duration was from eleven to twenty days.

Upon post-mortem examination it was found that, in every case, the air passages contained a muco-purulent matter, thick and adherent, which filled up almost all the bronchia, from their second division to their capillary extremities. Besides, there was found, in four instances amongst the children, a false membrane lining a part of the bronchial tubes, along with the purulent matter above mentioned, and gradually blending itself with it.

In all cases also, there was a uniform dilatation of the bronchial tubes, either general or partial. The mucous membrane was always red, and presented a rough appearance, characters which were most marked in the large bronchial tubes.

The pulmonary tissue was generally pale and bloodless, whilst the ramifications of the pulmonary artery were found gorged with blood.

Pulmonary emphysema, occupying especially the upper lobe and border of the lungs, was always met with, as well as a gaseous distension of the organs to such an extent that they no longer collapsed, but continued to fill the thoracic cavity after it had been opened.

In nine cases, six of whom were children, there were small purulent granulations scattered through the lungs. In the same number also there were little masses of lobular pneumonia. The bronchial glands were swelled, red, and friable, in all the children except one, and in two of the adults; but in most of the latter their condition was not recorded.

The other organs of the body, the brain and abdominal viscera, were characterized by a congested condition, the consequence of the sanguine distension of the right cavities of the heart and the whole venous system.

Our author, having completed his account of the post-mortem appearances, goes on to point out that the inflammation of the small bronchial tubes, is the principal pathological condition to which the other alterations of the respiratory apparatus can be traced. This inflammation was always characterized by the presence of the muco-purulent matter above described, which obstructed the bronchial tubes, and which, by its retention there, would naturally give rise to the dilatation of these latter. The general gaseous distension of the lungs, as well as the partial dilatation of the vesicles, is accounted for, Dr. F. thinks, on the theory adopted by Laennec in explanation of the latter, with some modifications. Dr. F. supposes that in inspiration the thick matter which distended the bronchial tubes would be forced towards the periphery, whilst the air which reached the pulmonary vesicles could not be forced out during expiration in opposition to this plastic matter, "so that at each inspiration the air was compressed by the column of liquid which retained it. The same thing took place to a still greater extent during the fits of coughing; for it must not be forgotten that the latter, on account of the narrowness of the glottis, is felt throughout the whole lung. Hence it followed that the pulmonary cells, constantly dis-

tended by air, were besides subjected to a force which tended to dilate or rupture them." This gaseous distension of the cells, by the compression which it must exert upon their walls, thus obstructing the capillary circulation, accounts both for the bloodless condition of the proper tissue, as well as the distension of the pulmonary artery, the right side of the heart and the venous system generally. As regards the purulent granulations, our author thinks that they result from the purulent matter being forced, under certain conditions, out of the capillary bronchia, into the pulmonary vesicles, and are not a direct secretion from the latter, as has been supposed by some, whence the name of vesicular pneumonia which has been applied to this lesion. Whether mechanically produced, or arising from inflammation of the cells, these purulent granulations are in either case acknowledged to be the consequence of capillary bronchitis, and liable on the other hand to become surrounded by an engorged or hepatized condition of the pulmonary tissue, constituting lobular pneumonia, a lesion which was never met with in those cases which proved rapidly fatal.

It is hardly necessary to say that the prominent symptoms, as well as the fatal termination, find a ready explanation in the fact of the defective hæmatisis and in the obstruction to the pulmonary circulation.

As regards the causes of the disease, it would seem that it is rarely a primary affection, in the strict sense of the term, having occurred in every case but one, in persons who were already labouring under inflammation of the larger bronchial tubes, which latter may be regarded as a principal predisposing cause. The only occasional cause which could reasonably be supposed to have exerted any influence, was the state of the atmosphere; the disease having been especially met with, in cold and variable seasons. It is probable also that the accumulation of the matter secreted from the larger bronchial tubes, owing principally to deficient expectoration, the consequence of debility, may have contributed in certain cases to the extension of the inflammation to the capillary tubes. Epidemic constitution also appears to exert a decided influence. At the time when the disease was observed at the children's hospital, eruptive fevers were prevailing in the same wards, and a considerable portion of the cases there met with, occurred in the course of, or as a consequence of these affections. In some of these cases, too, and in these only, were false membranes found in the bronchial tubes, a condition which our author is disposed to refer to the special or malignant character of the epidemic influence. A similar epidemic influence was observed during a late prevalence of the disease in the Hôtel-Dieu at Nantes.

We shall pass over the chapters on diagnosis and prognosis, simply observing that the disease was much more fatal when it was connected with eruptive and typhoid fevers &c., than when it followed a simple bronchitis.

Treatment.—The loss of blood appears to have been much less efficacious than free vomiting, which was generally followed, both in children and adults, by decided relief. Ipecacuanha was usually employed.

Tartar emetic in contra-stimulant doses, and persevered in with a view to this effect, was entirely inefficacious. Expectorants were resorted to only in the cases of adults, and here without any evident good effect. Large blisters to the chest, generally on its anterior surface, were often applied in the latter stages of the disease, but apparently without good effect, whilst they were often the source of extreme pain to the patients. Sinapisms to the extremities were frequently repeated in every case. Emollient drinks were prescribed, for which, in the second stage of the disease, among adults, an infusion of polygala was substituted.

Having described the treatment and its results, in the cases observed by him, our author proceeds to indicate the therapeutic measures which he conceives most calculated to fulfil the indications clearly pointed out by a knowledge of the pathology of the disease. In the first stage, the great object is to reduce the inflammation. For this purpose, the loss of blood, when proportioned to the age and strength of the patient, may be demanded, and especially so at the outset; but it must not be forgotten that the effect may be injurious in cases where the constitution is debilitated from other causes. At the same time emetics

should always be resorted to, and it is from them, Dr. F. thinks, that the greatest good is to be anticipated. Sinapisms, frictions and dry cups may be simultaneously employed. If notwithstanding these measures the disease goes on to the second stage, or is accompanied from the first, with evidences of prostration; the loss of blood is not to be thought of, notwithstanding the difficulty of breathing, the anxiety, and the violet tinge of the integuments. These symptoms of asphyxia are produced, says our author, by a mechanical obstacle to the passage of the blood through the lungs, and not by pulmonary congestion. By emptying the circulatory system, we do not remove the obstacle, but uselessly diminish the strength of the patient. Several of his cases evince the truth of the remark of Andral, that immediately after the loss of blood under such circumstances, suffocation augments, the rattles become more marked, and extend from the bronchia to the trachea. We must not therefore be imposed upon by the symptoms of asphyxia above mentioned, the cause of which is to be found in the accumulation of the products of secretion in the bronchial tubes. Our great endeavour therefore, should be to facilitate expectoration, with which view vomiting is again placed by our author in the first rank. For this purpose, ipecacuanha alone, in moderate and oft repeated doses, is recommended; free emesis being not so much demanded here, as nausea and slight vomiting from time to time. His high opinion of the efficacy of emetics in this disease, he enforces by an appeal to the authority of Fordyce, Cullen, and other English writers, as well as some of his own countrymen. In children it is especially important to attend to position. The patient should not be allowed to lie on the back, but should be supported in a sitting posture or bent forward, and in every way assisted in the expulsion of the expectoration. As the expiratory efforts become weaker, both in adults and children, it becomes important to stimulate the muscular action by appropriate remedies, such as polygala or gum ammoniac, or if these fail, the preparations of strychnia, as recommended by Stokes.

The remaining indication is to diminish the bronchial secretion, in cases where its extreme abundance is such, as that even a free expectoration is insufficient to disencumber the bronchial tubes. To accomplish this object, the balsamic and resinous preparations, such as tolu and turpentine, would be demanded. When a prompt and energetic effect was called for, the balsam copaiva would, our author thinks, be especially worthy of a trial. Having never seen any good from the use of blisters, but the reverse, he is disposed to discard them in the treatment of this affection, especially in the cases of children, where they are sometimes the cause of serious difficulty.

The diet should not be too rigid, but on the contrary when the disease has lasted more than five or six days, or from the very commencement, in the case of children, or of adults who have been much debilitated, it will be proper to support the strength by milk, broth, &c.

Appended to the above memoir are detailed histories of some of the cases upon which it is based, and abstracts of the remainder, which conclude the present volume.

T. S.

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- ART. XII.—1. *Eleventh Annual Report of the Trustees (and the Superintendent) of the State Lunatic Hospital, at Worcester, (Mass.)* December 1843, pp. 109.
 2. *Annual Report of the Board of Trustees of the Massachusetts General Hospital (and of the Superintendent of the McLean Asylum for the Insane) for the year 1843*, pp. 64.
 3. *State of the New York Hospital and Bloomingdale Asylum, for the year 1843*, pp. 28.
 4. *The Annual Report of the Physician and Superintendent of the Eastern Asylum, in the city of Williamsburg, Virginia, for 1843*, pp. 44.
 5. *Annual Report of the Managers of the Lunatic Asylum (Kentucky) for 1843*.

6. *Twenty-seventh Annual Report of the state of the Asylum for the relief of persons deprived of the use of their reason.* Frankford, 1844, pp. 25.
7. *The Nineteenth Annual Report of the officers of the Retreat for the Insane, at Hartford.* 1843, pp. 24.
8. *Sixteenth Annual Report of the President and Directors of the Western Lunatic Asylum, to the Legislature of Virginia: with the Report of the Superintendent and Physician, for 1844.* Staunton, 1843, pp. 41.

THE Report of the Massachusetts State Hospital for the Insane, for the past year, embodies a greater amount of statistical information than any previous publication of the kind that has ever emanated from an institution for lunatics, on this side of the Atlantic. We select such items as are of the greatest importance. The fiscal year of the Hospital commences on the 1st of December.

	Men.	Women.	Total.
Patients in the Hospital at commencement of the year,	124	114	238
“ admitted during the year, - - -	111	109	220
“ in the Hospital during the year, - -	235	223	458
“ discharged during the year, - - -	100	103	203
“ remaining at the close of the year, -	135	120	255
“ discharged, recovered, during the year, -	53	63	116
“ died during the year, - - - -	8	14	22
Monthly average of patients in the Hospital,			244 $\frac{1}{8}$
Daily “ “ “ “ “ for November,			259 $\frac{3}{8}$
Greatest monthly number of admissions, April and June, each			22
“ “ discharges, July,			28

The number of admissions, says Dr. Woodward, “has been greater the past year than any former year. We have constantly accommodated many more than we have rooms, so that the average number has been such as to fill all the apartments, and most of the time the infirmaries designed for the sick.” Moreover, there have been ninety-eight applicants who could not be admitted, for want of room. “The number of deaths has been large, and yet no great sickness has prevailed, and few cases of *acute* disease have proved fatal.”

	Men.	Women.	Total.
Whole number of patients admitted in 11 years,	917	860	1777
“ of patients discharged in 11 years,	713	668	1381
“ of patients discharged, cured, in 11 years,	381	411	792
“ of patients died in 11 years,	75	61	136
“ of cases less than one year in duration,	395	432	827
“ of which were cured or curable,	349	387	736
“ of cases more than one year in duration,	515	429	944
“ of which were cured or curable,	155	157	312
“ single 915, married 687, widows 117, widowers 58,			1777

The past year, “for the first time since the Hospital was opened, the number of married persons admitted has exceeded the number of the single, if we except widows and widowers, (103 to 92,)” “celibacy unquestionably favours insanity.”

In regard to the curability of insanity, in its early stages, Dr. W. says: “There are not now half a dozen cases in the Hospital, that entered it as recent cases, who have failed to recover, and become incurable and hopeless; and most of those which have left us were complicated with epilepsy, palsy, or such general prostration of health as to render them hopeless, independent of their insanity. I think it not too much to assume, that insanity, unconnected with such complications, is more curable than any other disease of equal severity; more likely to be cured than intermittent fever, pneumonia or rheumatism. If this be true, then this department of medical science has kept pace with, or overtaken, others which have heretofore been considered quite in advance of it.”

“Of patients under 20 years of age, males do not recover in common proportions, but females recover favourably. By the table (in the Report) it appears

that *more than two-thirds* of the females recover. So, also, of females between the ages of 20 and 25, nearly *two-thirds* recover, while only *about 50 per cent.* of the males recover. The rate of recovery increases till the ages of 45 and 50, when at its maximum both sexes recover in the proportion of from 75 to 86 per cent. These results are inexplicable and may not hold true elsewhere, but have been constantly presented here. Of 69 females between the ages of 45 and 50, *fifty-five* recovered, and only *fourteen* failed to recover."

In treating of the causes of mental alienation Dr. W. says, "Intemperance takes a prominent stand in almost every table of British or American statistics of 'cause.' It has ever been considered as first and foremost of influences which distract and destroy the nervous system. Delirium tremens arises almost solely from this cause. Apoplexy, palsy, epilepsy and other diseases arise from it and terminate in insanity. These are the physical causes of insanity which arise from intemperance; but it is impossible to say how many of the moral causes are more or less connected with this great evil, which not only produces pecuniary embarrassments, but domestic afflictions, family troubles, disappointments of various kinds, and that poverty which, in Europe and in large cities in this country, brings many under the influence of this great calamity."

If we understand the matter aright, the views of Dr. Woodward and of Dr. Brigham of the Utica Asylum are somewhat at variance on this subject; the former considering intemperance as, in fact, the true cause of the disease, and the latter believing that cause to be the mental anxiety which is the result of intemperance.

Of 28 cases supposed to arise from religious causes, 15 "were attributed to the Miller excitement, and much larger proportions are ascribed to the same cause in some of the New England institutions." If these cases "were recent, and not greatly exhausted, they recovered favourably. Two died from exhaustion after the highest excitement, and a few have apparently become hopelessly insane."

In his tables, Dr. W. follows "the old divisions of insanity," but "thinks little of the practical utility of this, or any other mode of classification." "Many persons," says he, "who are generally esteemed *idiots* are *congenital insane*. I have seen many who have *active* but never *rational* minds. I have been frequently visited by a class of persons resembling idiots in some respects, but differing from them greatly in mental development, who had minds capable of acquiring knowledge to a certain extent, whose bodies were active and well formed, which I believe is never the case with true idiots, and who were capable of doing many things well: but they were generally exceedingly mischievous, often extremely passionate, and had the animal feelings and propensities strongly developed, without the guidance of reason."

From "classification" Dr. W. glides into the medical jurisprudence of insanity, a subject now engaging the attention of physicians, mental philosophers and legislators. He says "it may not always be easy to distinguish between moral insanity and moral turpitude, but it is as easy as to distinguish between sincerity and hypocrisy, or between health and the first rudiments of disease." And further, "In all cases of *moral insanity* there is *physical* disease, which may be detected by a physician conversant with insanity, its precursors and concomitants, though it may not easily be discerned by a court or jury, however enlightened in the law. The distinction which I would make between moral insanity and moral turpitude is, that in the former, some diseased functions of organs, more or less intimately connected with the brain and nerves, has preceded or accompanies it."

"I have long thought that the monomaniac should not be held responsible for opinions or acts not apparently connected with his delusion. I have held this opinion because I do not believe that an important function of the mind can be disturbed so as to produce a delusion, without, in some measure, disturbing the whole mind and the feelings in some degree. Our experience confirms this, as we see daily, in hospitals, that monomaniacs are passionate, impulsive, and often extremely irritable. A large class of the homicidal insane are of this cha-

acter." In reference to the question that, if patients or persons labouring under this type of the disease, with the power of discriminating between right and wrong, and a full knowledge and appreciation of their amenability to the law, commit a felonious act, whether they ought to suffer the punishment prescribed for the crime, or be acquitted on the ground of insanity, he says, "Did not Hadfield (defended by Lord Erskine) know that he was acting contrary to the law of the land, when he shot at the king, with a full expectation that the execution of the law would consummate his wishes and designs? So Hathaway, when he struck Richards three blows, one in the name of the Father, one in the name of the Son, and one in the name of the Holy Ghost, would not have been deterred by any knowledge of the law or its consequences. He supposed that it was his duty to obey God rather than man; he was acting by higher authority than any earthly tribunal,—it was a command from Heaven. Hathaway was a monomaniac. So Elmer, when he received the command to kill the infant in the cradle, would not have been prevented by the fear of any human law, when he had received the commands of Heaven to take the life of the child and to slay two others. Davis killed Edwards by command of General Washington, whom he saw soaring in the air, and from whom he distinctly heard the order. *In all these cases the mind acts impulsively*; the victim of disease does not stop to consider at the time, as the rational mind would, the evidence of divine authority. The mind is unbalanced, and the antagonizing influences are not brought to bear upon it till the deed is done."

"Monomania is insanity: by it the integrity of the mind is disturbed, and after it is fully established, the mind can no more be considered sound, than the body can be considered well when severe local disease exists in it. One fact goes far to support this view of monomania, which is, that under its influence the mind becomes imbecile, and in many cases demented. This would hardly be the case if the disease did not, in a greater or less degree, disturb the whole brain."

While on the subject of treatment Dr. Woodward remarks, "The British physicians have learned not to bleed in mania, but the American physicians have not. While I have been writing this sheet a patient has been brought to my care, spare, pale and feeble, *who has been copiously bled four times in ten days*, and yet is not the less excited. The maniac has not a condition of the brain that requires depletion, but an irritable one, that needs cooling applications, and quieting remedies and regimen. Cold water and ice are much more likely to remove his excitement than bleeding and starvation. Narcotics will control him and make him quiet and rational, while he would grow worse if treated with severity, and be less likely to recover."

Explanatory of the assertion that "insanity frequently seems to be produced by insufficient diet," two cases are related, one of a collegiate student and the other of a young lady, both of whom were insane, and both had lived abstemiously. Under narcotics, tonics and a generous diet they both recovered; the former gained *forty pounds* of flesh in less than *three months*, and the latter *twenty pounds* in *forty days*.

Dr. Woodward dissents from the opinion of Dr. Jacobi of the Siegburg Asylum, near Bonn, in Germany, that the two sexes of the insane should be treated in distinct establishments. "The intercourse of the sexes in institutions of this kind is as favourable as elsewhere. I would increase rather than diminish it, and in the hospital would encourage walks, games, and especially dances, in which the intelligent and convalescent patients should be brought together, under the guidance of their attendants, and hold free and pleasant intercourse. Especially would I have them assemble together for religious worship on the sabbath, at singing parties, and other seasons of social enjoyment. The influence of the sexes is reciprocal everywhere, and when properly directed, has a favourable effect on both."

A large proportion of the patients at the Worcester Hospital continue to work. The profits of the farm and garden, the past year, was nearly 10 per cent. of the expenses of the establishment; "this reduces the price of board

25 cents per week, or 13 dollars a year, for each patient. The labour done by the patients in other departments, aside from agriculture and horticulture, is as much, or probably more, than all the hired help do in these departments, so that it may be assumed that *the patients of the hospital do as much labour as to do the whole work on the land, the avails of which are from two to three thousand dollars.* If the farm could be doubled, another 25 per cent. could be deducted from the price of board by the profits which would accrue from it."

The following extract exhibits the progress of American asylums. "Eleven years ago all the institutions in the United States did not admit annually as many patients as have been resident in this hospital the past year, and their condition, with few exceptions, was far from being good. There were not then more than one hundred patients in the New England institutions in a year, while now there are more than *fifteen* hundred. No other state in the Union has made such ample provision for its insane as Massachusetts; having had 458 in its State Hospital, 271 in the M'Lean Asylum, and 157 in the Boston Lunatic Asylum, in all 886, during the past year; and buildings are now being erected for at least 150 more, which will give room for 1036." The buildings here referred to are additions to the State Hospital.

2. The Report of Dr. Bell, of the M'Lean Asylum, is, if we are not mistaken, more voluminous than any by which it has been preceded from the same institution. In it are discussed, with great ability, many questions of importance in regard to insanity and the insane. In accordance with opinions expressed some three years since, Dr. B. rejects detailed statistics, restricting the information usually given by this method to a few prominent and general facts.

	Men.	Women.	Total.
Patients in the asylum at beginning of year, - - -	81	50	131
" admitted during the year, - - - - -	75	52	127
" in the asylum during the year, - - - - -	156	102	258
" discharged during the year, - - - - -	79	47	126
" discharged recovered during the year, - - -	43	20	63
" died during the year, - - - - -	12	6	18
" remaining at close of the year, - - - - -	80	54	134
Whole number admitted since opening of asylum (1818),	2269		
" " discharged since opening of asylum,	2135		
" " restored since opening of asylum,	1020		
" " died since opening of asylum,	204		

No suicide or serious accident has occurred during the year, and although the mortality has been greater than in any previous year during the administration of Dr. Bell, yet there has been less sickness than usual. The deaths were mostly from "lingering and necessarily fatal maladies."

The following extract shows the completeness of the interior of the buildings, and the extent to which the insane may safely be accommodated with the conveniences and luxuries of domestic life. "Over more than half of the galleries of the asylum we have introduced carpets, paper hangings, curtains, timepieces, looking-glasses, toilet-tables, wash-stands, and articles of mahogany furniture, and table furnishings in genteel families. The results of this experiment justify the assertion that the amount of damage is less than would occur in an ordinary hotel. In the sleeping apartments of these galleries the common swell-beam French bedsteads, with toilette-tables and wash-stands of the most fragile construction, to the extent of accommodating one half our boarders, have replaced the strong and peculiar articles formerly deemed essential in an insane institution; and in two or three years use not one has been intentionally destroyed."

In a general review of the cases, "somewhat exceeding a thousand," which have come under his care during his connection with the M'Lean Asylum, Dr. Bell says, "the best judgment I can form is, that *six* out of every *ten* discharged, including those considered unfit, those discharged with incomplete trial, and those dying prior to the event being determined, have recovered." Of

those cases which had not existed six months at the time of admission, "certainly nine-tenths have recovered."

"The form of disease which has most frequently occasioned, or rather preceded death, has been an almost universal failure of the powers of life, admitting of no place in the ordinary nosological catalogues, but which is reported as exhaustion, marasmus, debility," &c. "The next most usual cause of death with us is epilepsy. Each year proves that this comprises over a third of our mortality. For the forms of this disease combined with derangement or imbecility of mind, our experience forces the painful conclusion that no medical agents have the slightest curative, or protractive, or modifying influence." "The third most usual precedent of death is a form of cerebral affection, well marked in its outward manifestations, but the pathological character of which has not been well investigated, as far as I can judge. It, no doubt, is a form of inflammation of the brain and its membranes, yet still widely removed from common inflammation or phrenitis. The character of the mental aberrations is much more analogous to the delirium of typhus, or the advanced stages of typhoid fever, than to any ordinary type of mental derangement. The patient is rarely violent or furious, has momentary glimpses of recognition of familiar persons, but soon relapses into confused, indefinite, indistinct delusions, often has great abhorrence of food, from the belief that it is poisoned or uncleanly; countenance pale and shrunk, no intolerance of light or sound, frequent, yet feeble pulse, with great sleeplessness." "The remaining causes of death have been very few, but much diversified. Phthisis has been an exceedingly rare affection. I find but two deaths from this cause among the more than eighty deaths which are registered."

"In regard to the curability of insanity in its different manifestations, there can be no general rule better established than that this is directly in the ratio of the duration of the symptoms." But this rule is inapplicable to those cases arising from "sudden organic injury of the brain, manifested by a *fit* of greater or less marked decidedness." In puerperal insanity, the patient generally being early subjected to treatment, usually recovers. "The recovery, often protracted, is always entire; no distortions, weaknesses, or eccentricities of mind are apt to be its sequel." Cases of insanity with suicidal propensity, being also generally placed under treatment at an early period, "are almost all recoverable." In regard to these cases, Dr. B. says, "I should not, with my experience with the suicidal insane, pay the slightest regard to any promises which they might make touching the act." "The form of insanity accompanied with *strong suspicions of personal injury threatened*, of calumny experienced, of secret enemies and analogous hallucinations, and at the same time evincing but little aberration in the ordinary outward manner and conversation," is attributed to "a depraved personal habit, as its originating or perpetuating cause." "Experience shows just enough of recoveries, in such cases, to prevent absolute despair, and no more." The proportion of cases arising from the abuse of stimulants, has been less at the McLean Asylum than at some others. In severe cases the intemperance was a consequence, not a cause, of the mental disease. "The patient is not long in recovering after being subjected to the restraints of an institution." The cases of delirium tremens, admitted at the McLean under Dr. Bell, "have uniformly recovered spontaneously, without the employment of medicinal agents."

Down to the year 1840, that form of derangement named *paralysie générale* by the French, was unknown within the walls of this institution; but since that time "twelve or fifteen well-marked cases have been received." They were all but one males, and their delusions have "almost always borne reference to immense amounts of money, great power, or some similar exaltation. No recovery has occurred among them."

Dr. Bell suggests the following division of insanity, which might become the basis of a method of classification.

"1st. A form of insanity affecting the intellect; when intense and exalted

constituting the excited state of mania; when less aggravated appearing in delusions merely, in incoherence or imbecility."

"2d. Insanity not involving essentially the knowing faculties, as far as the conversation of the individual is concerned, but touching the moral sense exclusively." (Moral insanity.)

"3d. Insanity consisting in deranged or perverted sensibilities." Several pages, at the close of the report, are devoted to the medical jurisprudence of insanity. After mentioning the criterion of mental alienation adopted by several English legal authorities, he says, "The test of the presence of *delusions*, and the criminal act directly connected with and resulting from the delusions, was an apparent step towards the truth. It was a step which does not go far enough; it does not reach a long list of cases which every book on insanity details, and which every guardian of the insane sees, where the individual may be chaotically mad, yet without delusion; cases analogous to that state of mind produced by and manifested in intoxication, where the whole passions are running into wild confusion, yet not one false idea which could be tortured into delusion. Still less does such a definition touch those cases where, under a sudden, unaccountable impulse the mother kills her own infant, and months afterwards only becomes conscious of her act; still less will it comprise the cases of moral insanity, of motiveless propensities to kill for the mere craving for the act; to steal irrespective of the value of the thing taken, or its use, and the like, of which illustrations exist within almost every one's own knowledge, and which no one unprejudiced can doubt, are cases free from moral responsibility, whatever the rules of law may determine." We shall close by extracting the remarks upon monomania.

"In my own observation of even those considered as the purest cases of monomania, I have found, on being domiciliated with them, and admitted into those recesses of thought and feeling of which the world, uninterested as it is in the information, can know little or nothing, that there is uniformly so much general aberration of mind, so much more disease than is shown on the surface, as long since to induce the belief that no such form of insanity as that monomania which is so often described and referred to in books,—delusions confined to one topic, while the rest of the mind is unimpaired—exists in nature. This, too, is not only true as regards monomaniac alienations, but the various partial and less obvious forms of insanity, in which, as regards at least criminal responsibility, the only safe rule is, if insane at all, the subjects are irresponsible in all things."

3. The number of patients remaining in the Bloomingdale Asylum January 1st, 1843,

	Men.	Women.	Total.
Was, - - - - -	61	49	110
Admitted during the year - - - - -	45	40	85
Whole number - - - - -	106	89	195
Discharged and died - - - - -	52	43	95
Remaining December 31st, 1843, - - - - -	54	46	100
Of those discharged there were cured - - - - -	27	22	49
Died - - - - -	9	5	14

Of the whole number in the asylum during the year, there were single 90, married 84; widowers 9, widows 12.

The causes of death, in those who died, were Asthenia 4, Apoplexy 2, Paralysis 1, Phrenitis 3, Mania à Potu 2, Dysentery 1, Phthisis 1.

The whole number of admissions into this establishment from 1821 to 1843, both inclusive,—a period of twenty-three years,—was *two thousand seven hundred and sixty-nine* (2769). Of these, *one thousand three hundred and four* (1304) were cured, and *two hundred and sixty-one* (261) died.

"One striking advantage resulting from institutions of this character," says

Dr. Wilson, "is the prevention of suicide. This is illustrated by the fact, that of the number admitted during the year, fifteen had strong suicidal propensities; and yet they have been happily preserved from the commission of that crime."

This report is very brief, and Dr. W. intimates that it will be his last. Since its publication, and after having conducted the Bloomingdale asylum with much ability for a period of five years, he has retired from the situation, and has been succeeded by Dr. Pliny Earle.

4. The report for 1843, of the superintendent of the asylum at Williamsburg, is far superior to that by which it was preceded.

The number of patients in that institution, Jan. 1st, 1843,

	Men.	Women.	Total.
Was,	57	36	93
" " admitted in during the year	23	19	42
" " in the asylum in course of the year	80	55	134
" " discharged " " "	9	3	12
" " died " " "	9	5	14
" " remaining Dec. 31st, 1843,	62	47	109

The number of cures during the year is not given, but we are informed that "from the 1st of July, 1841, to the 1st of July 1843, or during the space of two years, 50 patients were received; of this number 24 have recovered, counting one case in the institution now convalescing."

The civil condition of the inmates during the past year, was, single 77, married 47, widowers 5, widows 5. Total 134.

The report contains an interesting article on "occupation," from which we learn that, in the female department of the asylum, there has been \$300, ⁷⁰/₁₀₀ worth of sewing, knitting, &c., performed during the year, exclusive of the mending. As illustrative of the utility of occupation, the case is related of a coloured woman who was brought to the institution in chains, a condition in which she had been for eight or ten years. The chain was removed, she was set to work, and is now "generally calm and quiet, and one of the most useful patients in the house."

The products of the garden are valued at \$786. ³⁰/₁₀₀. In the cultivation of the garden, as well as in the employments furnished by carpenters' and shoemakers' shops, the patients are more or less engaged.

During the year just elapsed a more judicious and effective organization of the institution has been introduced,—the *uniform* heretofore worn by the patients has been abolished and their clothing improved; religious services have been permanently established, and the old iron gratings to the windows—those prison-like appendages of horror—have been replaced by iron window-sashes.

Dr. Galt discusses the subject of Nosology, in reference to insanity, at considerable length. He says, "we prefer to substitute for the term *monomania*, that of *partial insanity*. And we would also take, in the place of *mania*, the term *general insanity*; for, the whole essential difference between these two varieties consists merely in the relative number of faculties involved. These two divisions should, strictly speaking, be the two great classes into which insanity properly falls. But we have added in the table three more! (Dementia, moral insanity and mania without delirium); and hence we are to consider the five as mere subdivisions of two great orders, which themselves differ but as to the comparative number of the faculties involved."

En resumé, Dr. G. gives the following definitions of his classification. "By *general insanity* we denote those cases in which there are a number of the faculties involved, but the intellectual derangement is the most prominent: in *mania without delirium*, on the contrary, there is the excitement of mania, but it is the feelings which are most prominently disordered. In *moral insanity* there is none of the intense excitement of mania, while the feelings are evidently the

characteristic faculties in a diseased condition. In *partial insanity*, the number of the faculties concerned is small, and the most apparent disorder is of an intellectual character. In *dementia*, viewed as incoherence, we have a rapid succession of ideas and passions, often without evident cause and devoid of connection: considered as fatuity there is a diminution of all the faculties in intensity. It is the termination of the other forms of insanity."

From the attention which this subject has received during the past year, and the space devoted to it in the reports emanating from several of the public institutions, we are induced to hope that, eventually, some system of classification may be devised which, by being based on truth, and addressing itself forcibly to reason, shall prove itself worthy of general adoption.

5. The report now before us, and coming from the State Asylum of Kentucky is signed by T. B. Pinkard, S. M. Letcher and J. G. Price, as attending physicians to that institution. According to their report, great ameliorations have been effected in the asylum during their connection with it. Ameliorations for which, judging by former accounts, there was sufficiency of room.

"Since the year 1824," say they, "up to 1843, the average per cent. of deaths, per annum, has a little exceeded *thirty-nine*. During the past year the per cent. of deaths has been *four and a small fraction*." This truly astonishing change is attributed to increased exercise, amusements, &c. "Among the patients," says the report, "we found few who did not use tobacco habitually and intemperately, in some form or other, whose brain and nervous system had been so powerfully impressed by this peculiar poison, that, had they been examined by the most astute [obtuse?] physician beyond the walls of a lunatic asylum, would have been pronounced the certain subjects of delirium tremens. This practice was therefore interdicted. The result of this law upon the health of many, both mental and physical, was truly remarkable. There are now those who, a few months since, were pale, emaciated and tottering about as confirmed debauchees, who are comparatively ruddy and robust, and who, according to the fixed laws of the animal economy, must have soon perished under the destructive influence of this nauseous and disgusting practice.

Carriages for the patients have been employed, for the first time, during the past year. "The male patients, with few exceptions, have been engaged in agricultural, horticultural, and some few in mechanical pursuits: the females in needle-work, knitting, washing, and all the little domestic occupations in detail." The patients are "fed on the best beef and mutton the market affords" and "are seated, in perfect order, at as fine a table as any hotel in Kentucky can furnish." And we will warrant that they do it ample justice!

		Men.	Women.	Total.
The number of patients	January 1st, 1843, was	79	77	156
"	" admitted during the year - -	56	18	74
"	" in the course of the year - -	135	95	230
"	" discharged and died - -	35	25	60
"	" Remaining December 31st, 1843, -	100	70	170
"	" discharged, cured - - -	19	14	33
"	" died - - -	7	8	15

Of the whole number there were single 140, married 60, widowers 10, widows 20.

6. We have received from Dr. Worthington, Resident Physician of the Frankford asylum, the twenty-seventh annual report of that institution, from which the following particulars are collected.

		Men.	Women.	Total.
In the asylum at the commencement of the year	-	25	21	46
Admitted during the year - - -	-	24	18	42
Whole number - - -	-	49	39	88

Discharged - - - - -	36
Of whom recovered - - - - -	17
“ died - - - - -	4

Of the whole number 58 were single, 26 married, 2 widowers and 2 widows.

Of those admitted during the year, the ages at the time of first attack, were under twenty years 16, from twenty to thirty 12, thirty to forty 8, forty to fifty 3, fifty to sixty 1, seventy to eighty 2.

7. By the nineteenth annual report of the Hartford Retreat we learn that this institution was under the medical care of E. R. Hunt, M. D., during the interval between the resignation of Dr. Bringham and the election of the present superintendent, John S. Butler, M. D.

The statistics of the Retreat for the medical year of 1842-3 are as follows.

Number of patients at commencement of year	89
“ admitted during the year,	Men 50, Women 33=83
Whole number “ “ - - -	172
Discharged “ “ - - -	40 36 76
Of whom were recovered	26 19 45
“ died	4 2 6

8. From this well-composed and appropriate report by Dr. Stribling, we collect the following information in regard to the Medical History of the Staunton Asylum during the year 1843.

	Men.	Women.	Total.
Patients in the Asylum at the commencement of the year, - - - - -	73	36	109
Patients admitted during the year, - - - - -	37	9	46
Whole number, - - - - -	110	45	165
Discharged, eloped, and died, - - - - -	29	7	36
Of whom recovered, - - - - -	17	6	23
Died, - - - - -	6	1	7
Patients remaining at the end of the year, - - - - -	81	38	119

Civil Condition.—Single 96, married 42, widowers 8, widows 6, unknown 3.

Age at which Insanity commenced.—Under twenty years, 25; from twenty to thirty years, 54; from thirty to forty, 33; from forty to fifty, 18; fifty to sixty, 4; sixty to seventy, 3; unknown, 18.

The following table exhibits the admissions, cures, &c., from the 1st of July, 1836, to 31st of December, 1843.

	Admitted.	Discharged.	Cured.	Per ct. of cures on admission.	Per ct. of cures on discharge.
Men	178	110	61	34	55
Women	80	52	33	41	63
Total	258	162	94	36	58

A large part of the report is devoted to the truly legitimate objects of publications of this kind, a lucid exposition of the results of the curative treatment and of the advantages furnished by the institution for the accommodation and amusement of the insane. He enters into no discussion of theories in regard to insanity, neither does he expound the true principles, nor any principles of the therapeutics appropriate to the disease.

We have been informed, (and we are disposed most cordially to concur with him in the opinion) that his reason for omitting these topics are, that an annual report, intended for the general reader, and ordinarily more read by the community at large than by members of the profession, is not the proper channel through which to convey intelligence of this kind. The public want *results of*

treatment—not the technicalities of physical medication. While we must acknowledge that the physician to any asylum for the insane confers a favour upon his professional brethren by unfolding to them the practical results of his experience, it is a question which we candidly think demands consideration, whether such information ought not to be conveyed through the appropriate publications,—the medical journals.

Dr. Stribling enjoys one advantage, upon which both he and his patients may well congratulate themselves. "We are permitted," says he, "to retain our patients, in the general, as long as we deem their interests to require it." Mark the result. "It has been our custom," he continues, "to inquire carefully, from time to time, after the health of those who were once members of our household, and we are gratified to report that, of the whole number discharged as cured, not more than three, so far as we could learn, have relapsed." Premature discharges are *the* grand evil of most institutions.—According to the report, the means for moral treatment at the Staunton Asylum, are altogether adequate to the wants of the patients, and Dr. S. apparently presides over a very happy household.

P. E.

ART. XIII.—*A Practical Treatise of Midwifery*. BY M. CHAILLY, Doctor of Medicine, and ex-chief of the Obstetric Clinique of the Faculty of Paris, Professor of Midwifery, Member of the Society of Medical Emulation, &c. &c. &c. Illustrated with two hundred and sixteen wood cuts. A work adopted by the Royal Council of Public Instruction. Translated from the French, and edited by Gunning S. Bedford, A. M., M. D., Professor of Midwifery and the Diseases of Women and Children in the University of New York. 8vo. pp. 530. New York, 1844.

It may well be questioned whether the very great multiplication of works on midwifery that has taken place within a few years is to the advantage of the student. The press has, for some time past, poured forth, with amazing rapidity, a great variety of publications in relation to the obstetric art—from the simple manual with its meagre outline of some of the leading principles and more important rules of practice, to the profound and erudite treatise in which every question connected with the subject is duly considered, minutely examined in all its bearings, and amply illustrated. From amid this accumulation of works it might be supposed that it would be easy for each one interested in the progress of obstetrics,—the student just entering upon his task, as well as the practitioner fully absorbed in the duties of his profession,—to select the one best adapted to his peculiar wants; but, in fact, the very multiplicity and varied character of the publications from which his selection is to be made, will be very apt to puzzle and mislead. Many of the obstetrical works that have been recently issued are unquestionably of the highest order, and admirably adapted, either as guides to the learner, or as works of reference for the busy and experienced practitioner: but it must not be concealed, that there are others, of no remote date, which are of a much more doubtful character, as well in reference to the authority of the principles and rules of practice taught in them, as to their general arrangement and comprehensiveness.

The work now before us is one of the latest of the practical treatises on midwifery that have been issued. How far, the question may be asked, is it adapted to the wants of the student and practitioner?

The treatise of M. Chailly comes to us with strong claims to our favourable notice. It is the production of a highly respectable teacher and practitioner of obstetrics in Paris,—it professes to embody the opinions and rules of practice of Paul Dubois, one of the most popular of the French obstetricians, and finally, it bears the authorization of the Royal Council of Public

Instruction of the University of France, as a manual to be used "in the Faculties, in the Schools of Medicine, and in the different courses instituted for the instruction of Midwives."

The work is certainly an excellent manual for the use of the young student, and will prove a useful introduction to the more extended and copious treatises on the science of obstetrics generally, or upon one or other of its subdivisions. The descriptions of the author are, in most cases, sufficiently clear and accurate, and his leading and more important practical directions precise and judicious.

The arrangement adopted by M. Chailly is somewhat different from that pursued by the majority of the writers on obstetrics. Pregnancy is first treated of in all its relations; its possible complications, and the means of remedying them are then successively considered; after which follows a similar consideration of delivery, in the presentations of the vertex, face, pelvic extremity, and trunk; and, finally, the same plan is pursued in relation to the puerperal state, its accidents and diseases.

"In this way, pregnancy, delivery—subdivided into four presentations—and the puerperal period, form undivided parts, in which the accidents and treatment are grouped together, then the manipulations cease to be abstractions, and are appropriated to each specific case."

"This practical arrangement," M. Chailly remarks, "will enable the accoucheur, at one glance, to embrace all the accidents which may occur either during pregnancy, in the various presentations of the fœtus, or during the puerperal period. He will, likewise, have the order in which the indications are to be fulfilled."

"With this arrangement, the author has been enabled to enter into numerous small details, which may appear somewhat tedious to the purely scientific, but which will be fully appreciated by the practical accoucheur, and which will be valued by the pupils themselves."

It is this attention, on the part of M. Chailly, to the minutiae of obstetrical practice which, in our estimation, particularly adapts the work before us for a guide to the young student in his acquisition of the rules of obstetric practice. For although "the small details" alluded to are more easily taught and acquired in a course of clinical instruction than through even the most accurate details given in books, they are, nevertheless, of sufficient importance to claim some attention on the part, more particularly, of the authors of such manuals and treatises as are intended for the use of students who are unfortunately deprived of the opportunities for adequate clinical instruction,—which is still, we regret to say, the case with a large number in this country.

While, however, we accord what we believe to be its due meed of praise to the treatise of M. Chailly, we cannot subscribe to the extravagant eulogium bestowed upon it in the preface of the American editor. It certainly cannot, with any degree of propriety, be said to "combine *all that is new and valuable in obstetric science*." The plan of the work is good; the doctrines it inculcates are, in general, accurate; while it contains the minute details of obstetric practice in which most other manuals are deficient; nevertheless, it is neither a complete treatise of midwifery, nor does it embrace a full and faithful exposition of the views of every authoritative writer on all points connected with the principles and practice of the obstetric art; and moreover, were we to enter into a more particular examination of each portion of the work, we should feel it our duty to call in question the accuracy of some of the views and practical directions of the author.

Upon the whole, even for the use of the young student, we should prefer the work of Rigby, and for those more advanced we have many in all respects superior; while, as a work of reference for the practitioner, the treatise of Churchill will be found much more full and satisfactory.

The two hundred and sixteen wood cuts introduced as illustrations of the text, and which, the author assures us, he designed himself, are among the most clumsy with which we are acquainted. They certainly do very little credit to

the author's skill as a draftsman; and, while they are far from being ornamental, they are, in one or two instances, of very questionable accuracy. We doubt whether they will be found to render more intelligible to the student the descriptions and manipulations to which they refer, or to give him very clear ideas of the mechanism of labour, or of the mode of applying instruments.

The notes of the American editor require no particular notice; he might, in our opinion, have greatly increased their number, and by so doing have added to the value of the work.

D. F. C.

ART. XIV.—*Second Annual Report of the Legislature, under the Act of March 1842, relating to the Registry and returns of Births, Marriages and Deaths in Massachusetts. For the year ending May 1st, 1843.* By JOHN A. BOLLES, Secretary of the Commonwealth. Boston, 1843: 86 pages, 8vo., with additional tables.

In most of the European governments, it is required that exact returns shall be made of the marriages, births and deaths, which take place not only in the larger cities, but in every section of the country. These, when collated by the several officers appointed and paid for the purpose, have placed us in possession of the most exact information in regard to the movements of population from year to year in different locations, as those are affected by the various favourable and unfavourable circumstances to which humanity is exposed. Exact knowledge has thus, within a comparatively few years, been substituted for speculation and uncertainty, which has led to the enactment of many sanitary ordinances and regulations highly advantageous to the public.

With a very few exceptions, no provisions exist in the United States, out of the large cities, for ascertaining the exact number of deaths, births and marriages. Consequently, the amount of these at any time occurring in the rural, or great mass of population, cannot be estimated, and thus no means exist which admit of comparisons being drawn between the movements of population in town and country, or in distant places. So far as we know, Massachusetts is the first of the states to set about correcting this deficiency. In so doing, she deserves all praise, as well as for the intelligence displayed by her legislators in effecting numerous other important objects, among which we may refer to the able geological, agricultural, and trigonometrical surveys, including botanical, zoological, and entomological investigations upon all the objects of natural history found within the borders of the commonwealth. The report upon "destructive insects," so ably accomplished by Dr. Harris, of Boston, comprises, of itself, nearly four hundred octavo pages. When the states generally shall have followed the enlightened example of Massachusetts, an amount of data will be amassed, from which the most interesting results must be drawn.

The Act of the Commonwealth passed in 1842, "relating to the registration and returns of Births, Marriages and Deaths," makes it the duty of the Secretary of State to prepare and furnish to the town (township) clerks blank forms of returns, in accordance with the details of the act, and to accompany these forms with the needful explanations and instructions; and generally to do whatever may be requisite to carry out the objects and provisions of the several laws relating to this matter. The annual return must be made by the several clerks during the month of May, under a penalty of ten dollars for neglect. The revised statutes bind citizens to make returns to the clerks of all births, marriages and deaths. The form of record of marriages includes the date of marriage, names of the groom and bride, ages of each, colour of each, and town (township) to which each belonged at the date of marriage. This form of record of births, includes the Christian name and surname of child, names of parents, sex

and date of birth. The form of record of deaths, includes the date of death, name of deceased, age, sex, occupation, and cause of death.

The annual report before us furnishes lists of the towns which made regular reports, as well as those which were delinquent, the proportion of those last being small. Following these are tabular statements showing in each county the population and modes of employment, as per the U. S. census of 1840, and the whole number of births, marriages, and deaths returned, for the year ending May 1, 1843. Succeeding the general table, are others embracing detailed statements in regard to every town, with remarks and an appendix of letters from many town clerks, furnishing much minute and interesting information. The table showing the aggregate of deaths, births, &c., returned in 1842 and 1843, makes it manifest, that the operation of the registration act is not yet as perfect as could be desired. There is, however, a perceptible improvement remarked in the returns for the last year. But notwithstanding the imperfections existing, the information and data obtained are of high value.

Appended to the annual report, is a communication from Lemuel Shattuck, Esq., of Boston, a gentleman who has made himself extensively known by his investigations of subjects connected with vital statistics. Mr. S. refers to the defects existing in the registration laws, and points out the best methods by which these may be corrected. The system proposed by him contemplates the accomplishment of two great objects:—First, to preserve the name, and afford the means of identifying the connections, and some facts concerning the personal history of every person who is born, marries, and dies, in the community. Second, To determine how health, life, and longevity, are affected by age, sex, condition, and occupation; by climate, season, and place of residence; and by the diseases to which, under any circumstances, man may be subject. He then adverts to the particular means best calculated to accomplish these several objects. His views are founded upon an intimate acquaintance with the matter, and a close consideration of the experience and results obtained by those who have laboured in the same department abroad, and especially with the able documents furnished by the “Registrar-General” of Great Britain, which we have frequently had occasion to notice somewhat at length in previous numbers of this Journal.

ART. XV.—*Address to the Members of the Massachusetts Medical Society.* Boston, March 1844.

HERE we have another evidence of the zeal with which the objects of science and useful research are pursued in the Bay State. At the annual meeting of the above named society, in May, 1843, a resolution relative to the registration of diseases and their existing circumstances and results was adopted, and the whole subject was referred to the counsellors for action. A plan was proposed by our colleague, Dr. J. D. Fisher, of Boston, upon which the society should engage in a series of statistical and other investigations that would be advantageous to medical science and public hygiene. The pamphlet before us contains the Report upon Dr. Fisher’s plan.

In pursuing their investigations, the counsellors advert to the influences exerted upon the duration of life by locality and occupations, &c. In regard to the operations of the last, they observe:—

“Our knowledge with regard to the influence of trades upon health rests almost entirely upon conjecture. The Second Report to the Legislature of Massachusetts upon Births, Deaths and Marriages, states, that the average life of thirty-five blacksmiths, who died during the last year, was fifty-nine years; that of ninety-nine carpenters and one hundred and eighteen shoemakers, each

forty-eight years; while seven hundred and three farmers enjoyed a life of sixty-five years. The duration of life in carpenters, who work abroad and have active exercise, when compared with that of shoemakers, who sit and live in close rooms, certainly differs from our common notion of the effect of those trades upon health, and a more extensive observation may show that the popular opinion is correct. It may be that the difference of mortality of men in various pursuits is not so much owing to their occupation as to their domestic condition.

"There is reason to believe that there is a great difference in the value of life in the different conditions of society. The Report of the Poor Law Commissioners upon the sanitary condition of the labouring classes of England and Wales, shows, that while the families of gentlemen, merchants and professional men, average a life, in different places, of from thirty-five to fifty years; labourers, operatives, mechanics, servants, and others similarly situated, also their wives and children, averaged a life of only fifteen to thirty-five years in various places. This difference of the value of life is not confined to England and Wales—we have obtained an analysis of the ages, and also of the domestic and social condition of one thousand seven hundred and sixty-seven persons, who have died in Dorchester within the last twenty-seven years. By this it appears that the average duration of life in the families, (including father, mother and children,) of labourers, fishermen, journeymen mechanics and factory operatives, was

	27 yrs. 5 mos.
Mechanics who carry on business on their own account,	29 " 6 "
Merchants, capitalists, professional and salary men, amateur farmers,	33 " 2 "
Farmers who own and cultivate their lands,	45 " 8 "

"This difference is not chargeable to the occupations merely, for it was found the most among the little children at their homes, as will be seen in the following table.

Periods of life at which death took place.	Number of persons dying in the families of				
	Laborers, &c.	Mechanics.	Merch'ts, &c.	Farmers.	Total.
Under 2 years - -	161	115	127	33	436
" 5 " - - -	203	148	172	50	573
" 20 " - - -	244	191	235	63	733
" 70 " - - -	462	351	499	191	1503
Over 70 " - - -	51	50	90	73	264
<i>Proportion of Deaths at each period to one thousand in each class.</i>					
Periods.	Laborers, &c.	Mechanics.	Mercht's, &c.	Farmers.	Total.
Under 2 years, - -	313	286	215	124	246
" 5 " - - -	395	368	292	188	324
" 20 " - - -	474	476	398	237	410
" 70 " - - -	901	875	847	735	850
Over 70 " - - -	99	124	152	274	149

"This great difference of mortality between the children of the poor and of the comfortable farmer, cannot be caused by the employment of the head of the family. There must be a cause or causes connected with the domestic condition or management to produce this discrepancy. But it is yet a question to be resolved by farther and wider observation, whether this, although a general fact in England and Wales, is here more than a particular fact in regard to Dorchester. A similar analysis must therefore be obtained of the mortality of many towns in all parts of the state, in order to determine whether life is meted out in

such various proportions to the different classes of society throughout the commonwealth.

"A decided influence is exerted upon the health and life by the moral character; yet there are no data to determine how much, or in what way this operates. The opponents of intemperance talk vaguely and largely of the effects of this vicious indulgence upon the health, but they differ widely from each other, because they have no well-digested system of facts to build their theories upon. We have but one observation, and that a limited one, taken by a physician in the course of two years over about six hundred people in a country town of this state. They were persons whose habits were known to him, and during the period of his observations they were under his sole professional care. He kept a careful record of all their attacks and of the duration of their diseases, and compared the number of days the intemperate were sick with those of the abstemious. He ascertained that the former were sick and required his attendance fourteen per cent. each, on an average, more than the latter; i. e., while the temperate were sick one hundred days, the same number of the intemperate were sick one hundred and fourteen days. This is a valuable observation so far as it goes; it shows that the alcoholic temperament or habit probably caused all the excess of disease of one class over the other. But some very important facts were not observed on account of the limited field of observation. The differences of fatality of similar diseases in these two classes, and of the average duration of life, may be and probably are greater than that of the quantity of actual disease; but a still greater difference, it is believed, would be revealed in the infirmities, in the broken constitution and impaired lives of the intemperate."

The following general observations made by the committee, express the views of the leading members of the medical profession everywhere—we mean the high-toned and less venial portion, who are always forward in promoting the public welfare at the expense of their own immediate interests.

"The members of this medical society have not only the duty of healing to perform, by which they obtain for themselves honour and profit, but they have the work of prevention also, by which they may do the greatest amount of good to their fellow men. They owe it to the world and to medical science to learn, as far as possible, the vital worth of every place, occupation and circumstance, as others learn their pecuniary value, and publish this abroad, so that men may avail themselves of the best means to obtain a fulness and a length of life.

"They are happily situated for this undertaking.

"Implanted as they are in every district and corner of the state—in towns of limited extent and well defined by geographical boundaries—and residing among an intelligent people who are ever alive to whatever may interest their individual well-being, with whose condition, character and relations to circumstances affecting health they are familiar, the members of this society have the means of ascertaining almost the whole amount, kind and degree of disease, as well as the times, circumstances and causes of almost all the mortality within this commonwealth. There is then a responsibility for the use of these means, and for accomplishing this good, resting upon this society, which ought to be considered, and which cannot be thrown upon the people, nor upon the government.

"For these reasons, and with these facilities, your committee propose, that the medical society proceed at once to the investigation of the nosology and mortality of Massachusetts, and invite the co-operation of each one of its members to carry on the work.

"Your committee propose, that a series of tables and questions be printed, and sent to each one of its members, respecting the topography and meteorology of every place; the characters and condition of the people; the kinds, amounts, and issue of disease; the causes of mortality, and duration of life.

"That a printed system of nosology be sent to each Fellow, and that all returns of disease be made corresponding to it.

"That each Fellow not only give answers to the queries respecting the topography of his town and district in general terms, but that he also describe the

sanitary condition of the residence of the patient, the time he has lived in it, his habits, occupation, &c.

"That each Fellow make annual returns of these observations by mail to such committee or officers as the counsellors may appoint to receive them.

"That this committee or officers digest all these returns into one system, and print the results in a tabular form, with such descriptions and annotations as may be suggested or supplied to them, and distribute the volume, when printed, to the Fellows of the society."

At the meeting of the Medical Society, the report was accepted, and Dr. Fisher, of Boston, Dr. Jarvis, of Dorchester, and Dr. Holmes, of Boston, were appointed a committee to lay the whole subject before the members, and devise plans and means to carry the matter into execution. The pamphlet before us contains the plan matured by this able committee.

G. E.

ART. XVI.—*The Cyclopedia of Practical Medicine*. Edited by JOHN FORBES, M. D., F.R.S., ALEXANDER TWEEDIE, M. D., F.R.S., and JOHN CONOLLY, M. D. Revised, with additions, by ROBLEY DUNGLISON, M. D. Parts 1, 2, 3, 4, 5, 6: Philadelphia, Lea and Blanchard, 1844: pp. 788, 8vo.

WE rejoice that this work is to be placed within the reach of the profession in this country, it being unquestionably one of very great value to the practitioner. This estimate of it has not been formed from a hasty examination, but after an intimate acquaintance derived from frequent consultation of it during the past nine or ten years.

The editors are practitioners of established reputation, and the list of contributors embraces many of the most eminent professors and teachers of London, Edinburgh, Dublin, and Glasgow.

It is, indeed, the great merit of this work that the principal articles have been furnished by practitioners who have not only devoted especial attention to the diseases about which they have written, but have also enjoyed opportunities for an extensive practical acquaintance with them,—and whose reputation carries the assurance of their competency justly to *appreciate* the opinions of others, while it stamps their own doctrines with high and just authority.

Thus, when we say that the articles on tubercular consumption and climate, are by Sir James Clarke,—that those on auscultation and exploration are by Dr. Forbes,—that most of the articles on the diseases of the lungs and pleura are by Drs. Forbes and Williams,—those on the heart by the late Dr. Hope,—those on the principal diseases of the digestive organs by Drs. Stokes and Todd,—those relative to the diseases of women and children and to pregnancy by Drs. Locock, Lee, Marshall Hall, and Montgomery,—those on mental diseases by Dr. Pritchard,—those on fevers, the exanthemata and cutaneous affections by Drs. Tweedie, Gregory, Todd, &c. &c. &c.; it is unnecessary to add that these articles present a full and fair representation of the state of Practical Medicine at the time they were written.

Had *all* the subjects been entrusted to equally competent persons, this cyclopaedia would have left little to be desired.

That in a work contributed by so many hands, even with all the control which the editors could exercise, there should be sometimes a want of harmony of view both as regards pathological and practical points, is a matter of course; but we do not conceive that this in the least detracts from its value. The medical library would be small into which was admitted those works only which harmonize perfectly in all their doctrines; and certainly it would be of very little value to the practitioner who should resort to it for aid when beset with practical difficulties. Indeed, in the present state of our science, a similar work, written by an individual, could not present a perfect harmony in all its views, unless this were attained at the sacrifice of truth—by the adoption of some Procrustean process, by which, in some cases, the truth should be exaggerated, and in others curtailed. So vast are the bounds of medical science,—so many

the tracts within its limits still imperfectly known, whilst the accounts of explorers are utterly contradictory and irreconcilable in regard to them,—that the life of an individual is far too short to enable him to examine the whole for himself, and a medical cyclopedia, written by one person, must therefore necessarily degenerate into a mere compilation, on many subjects,—a compilation, too, in which the compiler must be often incompetent justly to appreciate the facts, and his judgment, of course, be valueless.

The plan, then, of combining the labours of many in the preparation of a cyclopedia, appears to be the best that can be adopted, and experience confirms this view, for it is the one so successfully carried out in France and Germany in their celebrated medical dictionaries and cyclopedias.

The first six parts of the American reprint, forming the first volume, or one-fourth of the whole work, have been published with commendable punctuality, and we have no doubt that the whole will be ready within the period promised—a year from the appearance of the first No. The judgment of the profession will, we are confident, accord with ours as to the great value of this Cyclopedia.

ART. XVII.—*The Practice of Medicine: a Treatise on Special Pathology and Therapeutics.* By ROBLEY DUNGLISON, M. D., Prof. Inst. of Med. &c. in Jefferson Med. Coll., &c. &c. &c. Second edition in two volumes. Philadelphia: Lea & Blanchard, 1844: pp. 1314, 8vo.

THE early call for a second edition of this work, is sufficient testimony that it has been an acceptable one to medical students. “Grateful for this result the author has endeavoured to render the present edition still more useful by adding whatever of importance has transpired in the short period that has elapsed since the first edition was published, and by supplying omissions, which were almost inevitable in the first impression of a work in which so many subjects were treated of.”

ART. XVIII.—*Outlines of Pathology and Practice of Medicine.* By WILLIAM PULTENEY ALISON, M. D., F.R.S.E., Fellow and late President of the Royal College of Physicians, Edinburgh, and of the Medico-Chirurgical Society, Edinburgh; Honorary Fellow of the King's and Queen's College of Physicians of Ireland, and of the Royal Medical Society Edinburgh; Professor of the Practice of Medicine in the University of Edinburgh, and one of the Physicians in ordinary to her Majesty for Scotland. Philadelphia: Lea & Blanchard, 1844: pp. 424.

THIS elegantly written and philosophical work must become a classic in medical literature. Its author filled for some years, with signal ability, the chair of Physiology in the University of Edinburgh, from which he has been recently elevated to that of the Practice of Medicine, and this volume is designed as a manual for students attending his lectures. “In attempting to compress,” observes Dr. Alison in his preface, “within the limits of a Text-book for Lectures, the facts which seem to me best ascertained in regard to the nature, progress, and symptoms of diseases, and the effects of remedies upon them, it has been my object to simplify as far as possible, both the diagnostic marks of diseases, and the practical rules for their treatment,—dwelling only upon those, an accurate knowledge of which may be acquired without much difficulty, and on which it has appeared to me in practice, that we can rely with most confidence. I have endeavoured to connect these practical rules and directions with as full a statement as the limits of such a work will permit, of the grounds of those *opinions*, in regard to the causes, the intimate nature, and fatal tendency of diseases, which seem to me, in the present state of our knowledge, to be supported by the best evidence; because, notwithstanding all that has been said, and may be said, against medical speculation, I am fully convinced of the truth of the observation of Dr. CULLEN, that ‘at all times the practice of medicine has been, and

still is, with every person, founded more or less upon certain principles established by reasoning;’ from which it evidently follows, that any one who undertakes to teach the practice of medicine must be prepared to explain the grounds of his opinions; as well as to state the facts, and describe the appearances, on which he is to found his practical precepts.”

The work is divided into three parts. The first is devoted to the consideration of violent death—to diseases in general and their terminations—the remote causes of disease and the means of their prevention,—and the action of remedies and the evidence of their efficacy.

In the second part inflammatory and febrile diseases are treated of; and the third part is appropriated to the consideration of chronic and non-febrile diseases.

Dr. Alison is evidently well acquainted with the existing condition of medical science; he has not, however, satisfied himself merely with collecting medical facts,—he has carefully weighed and selected them—winnowed the wheat from the chaff—and in the performance of this task he manifests a calm and cautious judgment, and thorough honesty of purpose.

ART. XIX.—*Annales Médico-Psychologiques. Journal de l'Anatomie, de la Physiologie et de la Pathologie du Système Nerveux. Destiné particulièrement à recueillir tous les documens relatif à la Science des Rapports du Physique et du Moral, à la Pathologie Mentale, à la Médecine Légale des aliénés, et à la Clinique des Maladies Nerveuses.* Par M. M. les Docteurs BAILLARGER, Médecin des aliénés à la Salpêtrière. CERISE et LONGET. Paris, Janvier, 1844.

Medico-Psychologic Annals. A Journal of Anatomy, Physiology, and the Pathology of the Nervous System. Particularly devoted to the collection of all documents connected with the science of Physical and Moral relations, to Mental Pathology, the Medical Jurisprudence of Insanity, and Clinics on the Diseases of the Nerves.

IF there be any branch of medical science which, during the last half century, has made more rapid strides towards perfection than any other, it is that of the Pathology and Therapeutics of Insanity. So much attention has been devoted to this disorder during the last few years, as to have made room for a periodical in which the accumulating knowledge upon the subject may be concentrated. Such is the journal, the title of which is at the head of this notice, and which was commenced in January 1843, and is published once in two months, each number containing about one hundred and fifty pages.

The names of the professional men connected with it are a sufficient guarantee for its excellence. Among its collaborators are M. Ferrus, general inspector of establishments for the insane, and formerly principal physician to the Bicêtre; M. Foville, principal physician to the asylum at Charenton; M. Lélut, principal physician to the Salpêtrière; M. Pariset, honorary principal physician to the Salpêtrière; M. Mitivié, physician to the Salpêtrière; M. M. Voisin and Fabret, physicians to Salpêtrière and Bicêtre; M. Delaye, physician to the asylum of Toulouse; M. Parchappe, principal physician to the asylum at Rouen; M. M. Bottex, Brière de Boismont & Guislain, all of whom are well known by their writings upon mental alienation. The number before us contains the following articles: 1st, On the Psycho-Physiological Doctrines of the ancient Hindoo Philosophers, by Dr. Thore. 2d. Historical Studies upon Mental Alienation, by Ch. Lasègue and Aug. Morel. 3d. Surveillant, Nurse and Guardian, (the officers required by law in each public asylum for the insane in France,) by Dr. Bouchet, principal physician to the asylum at Nantes. 4th. On Hysteric Paralysis, by Dr. Macario. 5th. Observations on Insanity from Intemperance, by Brière de Boismont.

These articles are followed by appropriate extracts from other Medical Journals, Proceedings of the Academy of Science, and the Royal Academy of Medicine of Paris, Notices of Reports of Lunatic Asylums, &c. &c. We extract the following notice of the disease of M. Heinroth, the doctrinal disciple of Stahl, and, of

late years, the most distinguished supporter of the German or psychological opinions in regard to the origin, nature, and seat of Insanity.

A letter from Leipsic, (Saxony,) of the first November, 1843, says, "The medical sciences have suffered a great loss in the person of M. Heinroth, who recently died in this city at the age of seventy years; and who was, unquestionably, one of the most celebrated physicians of mental diseases that Germany has ever produced. Heinroth was born in Leipsic in 1773. He commenced his studies in that city, and completed them in Paris, where he devoted himself particularly to the treatment of mental diseases, under the direction of the celebrated Pinel, of whom he became one of the most learned students. On returning to Leipsic, he was elected to the chair of Mental Disease, (Psychiatrie,) which the Saxon government created expressly for his occupation, and at the same time was made physician to the Insane Hospital of St. George in this city. He fulfilled the duties of these stations until the time of his decease.

Heinroth was the first to introduce into Germany the principles developed by Pinel and Esquirol in the treatment of the insane, principles which, as is well known, consist in the employment of means acting upon the moral rather than the physical powers of the patient, and which dispelled the barbarous treatment theretofore existing in our country towards the unfortunate beings who are deprived of reason.

Heinroth translated into German, accompanied by comments and annotations, all the works of Pinel, as well as those of Esquirol, with whom he was upon terms of intimate friendship. He has published a large number of original works, which have gained an extensive celebrity. Among them are the "Manual of Mental Diseases," "Guide to Physicians of the Insane," "Treatise on Mental Hygiene," "Manual of Anthropology and Principles of Criminal Psychology." We have also, from the pen of M. Heinroth, several popular romances and novels, published under the pseudonym of Treumand Wellentreter. M. Heinroth was member of nearly all the learned societies, and among them the Royal Academy of Medicine of Paris and the Royal Society of London. The King of Saxony bestowed upon him the title of "Aulic Counsellor."

The Medico-Psychologic Annals supplies a long-wanted desideratum to the physicians devoted to the treatment of Insanity, and of nervous diseases in general. It is published by Fortin Masson, &c., Place de L'Ecole de Médecine, No. 1, Paris. P. E.

ART. XX.—*Pathological Hæmatology. An Essay on the Blood in Disease.* By G. ANDRAL, Professor of General Pathology and Therapeutics in the University of Paris, &c. &c. Translated from the French by J. F. MEIGS, M. D., and ALFRED STILLE, M. D., Philadelphia. Lea & Blanchard, 1844: pp. 129, 8vo.

We have already (see No. 1 of this Journal for April, May, and October, 1842), given so full a summary of the course of Lectures of M. Andral, which form the basis of this work, that we need not again refer to the subject further than to recommend the volume before us as embodying in a convenient form an account of the very valuable researches of M. A. relative to the condition of the blood in disease.

ART. XXI.—*The Principles and Practice of Modern Surgery.* By ROBERT DRUITT, Surgeon. From the Third London Edition. Illustrated with one hundred and fifty-three Wood Engravings. With Notes and Comments, by JOSHUA B. FLINT, M. D.—M.M. S.S., late Professor of Surgery in the Medical Institute of Louisville: 8vo. Philadelphia, Lea & Blanchard, 1844: pp. 568.

HAVING already expressed a favourable opinion of this volume in noticing (No. for October 1842, p. 439), its first republication in this country, we need

only add now, that the changes, made by the author in his last edition, have been judicious, and add much to the value of the work.

"The additions are solely confined to the practical departments, whilst those chapters which treat of theory, or pathological principles, are rendered somewhat shorter than before."

The American reprint has been enriched with upwards of sixty wood-cuts, not contained in the original, and we are happy to find that in these additions, reference has been had to elucidating subjects of ordinary occurrence in the practice of the surgeon,—as the nature and phenomena of fractures and dislocations, the processes for their reduction, bandaging, &c.,—rather than operative displays with the knife, which tend to foster a taste for cutting,—the crying evil of surgery at the present day.

ART. XXII.—*Report on the Progress of Practical Medicine in the Departments of Midwifery and the Diseases of Women and Children*, during the years 1842–3. By CHARLES WEST, M. D., M. R. C. P., Physician to the Royal Infirmary for Children; and Physician-Accoucheur to the Finsbury Dispensary. London, 1844: pp. 37.

This report, which was originally published in our cotemporary, the British and Foreign Medical Review for April last, furnishes a pretty full and very well drawn up digest of the facts, which are either new or seem to illustrate what was already known, or to confirm the propriety of old modes of practice on the general subjects of which it treats during the period mentioned. We shall enrich our summary with such portions as relate to subjects not already noticed.

ART. XXIII.—*Transactions of the New York State Medical Society*. Vol. vi. Pl. I. Albany, 1844: pp. 78, 8vo.

THE New York State Medical Society has, for many years, continued on its useful course, exerting always its influence in upholding the dignity of the profession, and for the improvement of our science, and annually publishing a collection of papers, with an abstract of its proceedings at its annual session.

The volume for the present year contains the annual address by Dr. White, on insanity, noticed in the last number of this journal; Observations on equivocal generation, by Dr. T. W. Blatchford; Medico-legal observations on two cases in which the crime of murder was charged, by Dr. A. Willard; Medico-legal testimony in a trial for murder by poisoning with arsenic, by Dr. N. S. Davis; on the deaths from poisoning, in the city and county of New York, during the years 1841, '42, and '43, by Professor J. B. Beck.

Dr. Beck has obtained from the records of the coroner of New York city and county, the following interesting statistics of poisoning, during the years just named.

Eighty-three inquests for poisoning were held—forty-six on males and thirty-seven on females.

Of these there were poisoned by

Arsenic,	-	-	-	-	13	Ardent Spirits,	-	-	-	1
Opium,	-	-	-	-	8	Gin,	-	-	-	1
Laudanum,	-	-	-	-	39	Alcohol and Laudanum,	-	-	-	1
Paregoric,	-	-	-	-	1	Brandy and Laudanum,	-	-	-	1
Solution of Morphia,	-	-	-	-	3	Strychnia,	-	-	-	1
Corrosive Sublimate,	-	-	-	-	3	Prussic Acid,	-	-	-	1
Colchicum,	-	-	-	-	1	Phosphorus,	-	-	-	1
Sulphuric Acid,	-	-	-	-	2	Carbonate of Potassa,	-	-	-	1
Tinct. of Sanguinaria,	-	-	-	-	4					
Tartar Emetic,	-	-	-	-	1					
						Total,				83

Of the 83, there were, suicides,	-	-	-	-	-	50
Taken by mistake, or through ignorance, &c.	-	-	-	-	-	28
Unknown,	-	-	-	-	-	5

It appears that the two poisons principally used were *arsenic* and *opium* in some of its forms.

In the cases of poisoning by *arsenic*, the smallest quantity taken was one drachm, and the largest two drachms. The shortest time of intervening between the taking of the poison and the death, was four hours, the longest two days.

In the cases of poisoning by *opium*, the smallest quantity was one drachm, the largest, one and a half ounce. The shortest time between the taking and death, 8 hours, longest, 20 hours. Average time of six cases, 14 hours.

Of the cases of poisoning by *laudanum*, the smallest quantity was *one drop*, the largest was 16 ounces. The shortest period between taking and death, 2 hours, the longest, 48 hours. Average of 23 cases, 12 hours.

ART. XXIV.—*Report of the Inspectors of the Western Penitentiary of Pennsylvania, for the Year 1843, with the Accompanying Documents.* Allegheny, 1844: pp. 16, 8vo.

THERE were in the Western State Penitentiary on the 1st day of January, 1843, one hundred and sixty-three prisoners, of whom fifty-nine were males and four females, and there were received during the year, seventy, making a total of two hundred and thirty-three. There were discharged within the year, eighty-five; sixty-three by expiration of sentence; sixteen by pardon, and six by death, leaving in prison on the 1st of January, 1844, one hundred and forty-eight, of whom one hundred and forty-three are males and five females.

The whole number of prisoners received from the opening of the Penitentiary, July 31, 1826, to January 1, 1844, is nine hundred and eighty-five; of these eight hundred and six were white males; one hundred and forty coloured males; seventeen white females, and twenty-two coloured females.

On the 1st of January, 1843, there were six prisoners on the sick list, labouring under the following diseases: one, abdominal dropsy, (subsequently fatal); two, functional disease of the liver; one, chronic diarrhœa, with indigestion; one, scrofula, (discharged subsequently by pardon, or it would probably have terminated fatally,) and one, neuralgia of stomach.

The number of deaths during the year were six;—one, yellow, from apoplexy; one, white, from hæmoptysis; one, yellow, from nervous fever; one, white, from dropsy; one, white, from consumption; and one, black, from scrofula.

There were under treatment on the 1st of January, 1844,—one, scrofula (developed in prison); one, bronchitis, (do.); one, partial paralysis, (do.); two, consumption (entered with the disease); one, scrofula, (do.).

“To satisfy your minds,” observes the physician, Dr. J. H. Smith, in his report, “as well as the minds of the public, and oppose the arguments urged against the system of solitary confinement adopted by *this* State, as tending to engender mental disease and bodily infirmities, I would refer you back for the last five years. On the 1st of January, 1839, there were in the prison one hundred and thirty-four convicts; and the aggregate number received since then, is three hundred and ninety-one, in all, five hundred and twenty-five. Out of this number, twenty-one deaths have occurred, making an average of four per cent. on the scale of fatality. The warden’s report will, doubtless, embrace the whole number received;* and so far as the records exhibit, only one case of confirmed insanity stands registered.”

* This is stated in the warden’s report to be 985.

ART. XXV.—*Guy's Hospital Reports. Second Series, Nos. 1, 2. April and October, 1843.* Edited by GEORGE HILARO BARLOW, M. A., M. D., Physician to Guy's Hospital. EDWARD COCK, Assistant Surgeon to Guy's Hospital. EDMUND L. BIRKETT, M. B., Secretary to the Clinical Society. J. H. BROWNE and A. POLAND. London, 1843: pp. 572, 8vo.

THE publication of these reports was commenced in 1835, under the belief that they "would prove useful to the pupils of Guy's, by giving a stimulus to their clinical pursuits; that they would be acceptable to others, by increasing their acquaintance with the practice of one of the leading schools of the metropolis; and that they would be generally received as a laudable and promising endeavour to throw open a large emporium of knowledge, hitherto almost entirely closed." These anticipations seem to have been fully realized. The volumes which have appeared comprise a number of admirable papers and monographs, by the medical officers of the hospital, with cases and numerous plates.

In the new series, which commenced in April, 1843, it is proposed to extend the scope of the reports, and in addition to the finished treatises, the works of individuals, with which the pages of the work have been principally enriched, "to illustrate the different classes of disease by the aid of series of reports, collected within the walls of the hospital, and furnished by the books of the clinical society; and likewise to apportion a part of each number to the consideration of anomalous cases from the same source."

It is proper to mention that the Clinical Report Society consists of an organized body of reporters, taken from among the more advanced pupils. The object of the society is to secure an account of every patient admitted; for which purpose the hospital is divided into ten departments—four exclusively medical, four exclusively surgical, one mixed, and one obstetrical. The number engaged at one time in reporting is about thirty. "The labours of the reporters are so regulated, as to demand only such an amount of time as every student, at the advanced period of his pupilage required by the society, should devote to the practical prosecution of the studies of medicine and surgery; whether this be with a view to the qualifying himself for any of the several courts of examiners, or to the ultimate, and by far more important object, of fitting himself for the proper discharge of those duties which, in the pursuance of the profession, must devolve upon him.

"But, in order to secure, as far as possible, the possession of the reports, and at the same time indirectly to stimulate the members reporting to the full completion of their work, a weekly meeting is held in a room appointed by the hospital; where all the cases admitted since the previous meeting are mentioned; the inspections after death, and the operations performed during the week, detailed; and any subject of interest in the wards generally noticed;—so that this assembly forms the centre of all the clinical information of the hospital; the officers of the society are enabled to detect any falling off among the reporters; and these again are here encouraged to ask for the solution of any difficulty that may have occurred, or to offer any suggestions regarding the cases under their care; while all who attend, either officers or members, reporting or not reporting, have, in these meetings, laid before them an epitome of the hospital, where both matter of improvement and interest is sure to be brought before their notice."

The organization of this society is an admirable one, and we regret that we cannot give all the details, but we must refer for this to the introduction to the first volume of the new series; at the same time we would urge, with the greatest earnestness, upon the students of the large hospitals in this country, the establishment of similar societies.

The two numbers before us contain nineteen papers, with twenty-four plates, some of which are finely coloured.

We shall enrich our journal hereafter with abstracts of some of these valuable papers.

SUMMARY

OF THE

IMPROVEMENTS AND DISCOVERIES

IN THE

MEDICAL SCIENCES.

ANATOMY AND PHYSIOLOGY.

1. *Process of Secretion*.—"The greater number of the fluids, which constitute the basis of the different secretions—such as the gastric and intestinal juices, the saliva, tears, milk, mucus, wax of the ears, fat, &c.—proceed from a gradual dissolution of the substance of the very glands which are generally supposed to eliminate them. The blood, no doubt, furnishes certain elements for each secreted fluid; but that which constitutes the characteristic constituent of each secretion, is the fluid contained in the microscopic *cells*, which enter into the formation of every gland:—this fluid is poured out in consequence of either the bursting, or the dissolution, of the cellular envelopes. The *cells*, which along with the *blastema* constitute the parenchymatous substance of glands, are developed within the minute secreting canaliculi. When they have attained to a certain degree of maturity, they detach themselves from the interior, and are carried along in the secreted fluid."—*Mandl's Manual of Gen. Anat. applied to Physiology and Pathology*.

2. *Experiments on the action of Strychnia on the Nervous System, and on General and Muscular Sensibility*. By Dr. PICKFORD, of Heidelberg.—It results from these experiments, 1. That the irritability of the reflex apparatus, both of the spinal marrow and medulla oblongata, is extraordinarily increased, so much so, that the slightest contact with the skin produces tetanus. 2. Irritation of the abdominal viscera after the destruction of the spinal marrow, is followed by the same effects in a frog in a state of tetanus as in a healthy frog, viz., by local contractions. When the medulla oblongata remains entire, the local movements in the tetanic frog are greatly augmented in severity and extent, but they are regular as in the healthy frog. 3. There is, however, this marked difference between the tetanic and the healthy frog, that in the latter a strong irritation of the abdominal viscera excites movements of the trunk when the medulla oblongata is uninjured, while in the latter such movements do not follow the irritation, whether the medulla oblongata be removed or preserved entire. Consequently, the effect of strychnia is to augment considerably the reflex activity of the cerebral nerves, both those influencing the organs of voluntary and involuntary motion; but it annuls the reciprocal action which the two systems of reflexion undergo in the medulla oblongata.—*Gaz. Méd. de Paris*, 5 Jan., 1844, from *Roser et Wunderlich, Archiv. für Physiologische Heilkunde*, 1843.

3. *Cryptogamic Plant found growing in the Sputa and Lungs of a man who laboured under Pneumo-thorax*.—Dr. BENNETT, in making microscopic examinations of tubercle, tuberculous sputa, and the lining membrane, observed on some occasions fragments of tubes, more or less massed together, which appeared dis-

tinctly jointed, and which led him to suppose that a vegetable structure must occasionally be developed in the matter of tubercle found in the lungs. This supposition he afterwards ascertained to be well founded. On examining the sputa of a man in the Royal Infirmary, the most beautiful and regular vegetable structure was observed. The individual was labouring under phthisis in its last stage, with pneumo-thorax. On examining a drop of the inspissated purulent-looking matter, discharged by expectoration, with a magnifying power of 300 diameters, he could perceive long tubes, joined at regular intervals, and giving off several branches. They varied in diameter from $\frac{1}{100}$ to $\frac{1}{50}$ of a millimetre, and appeared to spring without any root from an amorphous soft mass. Interspersed amid these tubes were numerous round and oval globules, often $\frac{1}{5}$ but generally $\frac{1}{10}$ of a millimetre in diameter, which here and there assumed the form of bead-like rows. Both the joined filaments and spores were developed in great abundance on the sides of the spit-box containing the man's sputa, which, in this situation, were inspissated, and presented a yellowish coherent and viscous layer. Two days after, the man died, and the left lung was found studded with cavities of different sizes, some of which communicated, by fistulous openings, with the cavity of the pleura. Several of the smaller cavities were partly filled with soft tuberculous matter. On examining this matter microscopically thirty-six hours after death, exactly the same appearances presented themselves as above described. Numerous jointed transparent tubes were readily observed, mingled with round or oval corpuscles. Dr. Bennett has no doubt that these vegetations existed in the man's lungs during life; first, because they were apparent in sputa freshly expectorated, and 2dly, because they could not have reached such a state of development as has been described, in thirty-six hours. They continued to grow and develop themselves in the tubercular matter, after the removal of the lungs from the body, as well as in the matter discharged before death by expectoration. They resembled the *Penicillium glaucum* of Link.—*Medico-Chirurg. Rev.*, April, 1844.

4. *Structure of the Lungs.*—Mr. ADDISON (*Philos. Trans.* 1842), has given an account of the anatomy of the minute air-passages, which, while it confirms nearly all that Reisseissen observed, is more complete, and very probably true. In the fœtus the ultimate bronchial subdivisions are tubular; they have a regularly branched arrangement, ramifying symmetrically in all directions, and terminating without anastomoses in closed extremities which are generally situated at the boundaries of the lobules. But when an animal has respired, the entrance of the air into the lungs distends the lobules, and the ultimate bronchial subdivisions undergo a great change. The membrane composing each of them offers only a feeble resistance to the pressure of the air, and is pushed forwards and distended laterally into rounded inflations, forming a series of communicating cells, which meeting on all sides those of the adjoining bronchial subdivisions, are moulded by the mutual pressure into various hexagonal and pentagonal forms. These distended passages (something like large beaded tubes) Mr. Addison calls *lobular passages*; and a section of them shows the *oval foramina* leading from cell to cell, which are so conspicuous in a thin layer of inflated and dried lung. The *air-cells*, according to this account, are the inflated parts of the *intralobular* bronchial subdivisions; and those of each lobule form a distinct system, having no communication with those of the adjacent lobules, except in the common trunk from which the intralobular bronchi of each system are derived. The air-cells are from 1-200 to 1-500 of an inch in diameter; and the oval foramina are from 1-60 to 1-150 of an inch or less in diameter. The blood-vessels lie upon each *lobular passage*, and between each two of them.—*Page's Report*, in *Brit. and For. Med. Rev.*, Jan., 1844.

MATERIA MEDICA AND PHARMACY.

5. *New Salt of Mercury and Quinia.*—The combination of oxymuriate of mercury and tincture of bark has been long known as a remedy for the treatment of scrofula and enlarged mesenteric glands, also in the treatment of strumous ophthalmia. This combination is well known to be unchemical, the salt being decomposed by the bark. Mr. R. N. M'Dermott of Dublin, convinced of the value of a combination of the active principle of the barks with salt of mercury—"a combination which, according to the concurring testimony of various physicians, accelerates, in a remarkable manner, the constitutional action of mercurials, was brought to think that a definite compound might be formed in which the bichloride would perform the part of an acid, and the alkaloid quinia form the base, and which would combine the therapeutic value of these two important substances." On trial he found the results were exactly as he had anticipated. He obtained a double salt, a proto-chloride of mercury and quinia, chemically combined. On subjecting it to the strictest analysis, no trace of bichloride could be detected. The intimate combination of the active principle of the bark with mercury in the form just indicated, will, in his opinion, render it less liable to produce the ill effects of mercury on some constitutions, while its efficacy as a general remedy must be much enhanced. He anticipates that the combination of these two agents will rarely fail of producing a happy result in the diseases of the eye generally, but especially when scrofula is present.—*Dublin Medical Press*, March 13, 1841.

6. *Valerianate of Zinc*—This new preparation is extolled by some of the Italian physicians as a very powerful remedy in several nervous affections. It is formed by adding the protoxide of the metal to the vegetable acid to saturation, and then slowly evaporating the solution. It is administered in the form of pill in the dose of one or two grains. In the *Buletino delle Sc. Mediche* some cases of neuralgia successfully treated by it are recorded.

7. *Chloride of Magnesium.*—This has lately been recommended as a saline aperient by Dr. Lebert. It is said to produce no injurious effect whatever on the stomach, and if occasionally it gives rise to any unpleasant sensation, it inconveniences less than most other purgatives. It would also seem to favour digestion since its purgative action is followed by an improvement of the appetite. The mean dose as an aperient is 32 grammes for an adult, and half that quantity for a child of from ten to fourteen years of age.—*Prov. Med. and Surg. Journ.*, 24 April, 1844, from *Gaz. Méd de Paris*.

MEDICAL PATHOLOGY AND THERAPEUTICS AND PRACTICAL MEDICINE.

8. *Best mode of administering Quinine in Intermittent Fevers.*—In administering quinine between the paroxysms of intermittent fevers, some prefer giving it in repeated small doses, others in one large dose shortly after the previous paroxysm is over; while a third give the same quantity an hour or two before its expected return.

Dr. THOMAS STRATTON, of the British Navy, treated a number of cases of intermittent fever in 1842, at Port Maitland, Canada, and says that after considerable observation of the comparative rapidity of cure by repeated small doses, or by a single large one, he gives a decided preference to the latter mode.—*Ed. Med. & Surg. Journ.*, April, 1844.

9. *Rarity of Consumption in Marshy Countries.*—M. NEPPLE, of Lyons, in an interesting communication to the French Academy of Medicine, has brought forward evidence to prove that phthisis is a very rare disease in marshy countries. He states that, from the year 1818 to 1829, during which he practised in the marshy canton of Montluel, he was struck with the small number of consumptive, scrofulous, and even goitrous individuals he met with. On investigating the subject more minutely, he found that the more marshy the district, and the greater the number of stagnant ponds and morasses, the more rarely did he observe any traces of these diseases in the farmers and labourers of the district.

To obtain more numerous facts, he wrote to several of his medical brethren in the surrounding cantons, to ascertain whether the same fact had been observed by them. M. Duteche, physician in the canton of Chalamont—a canton much fuller of ponds and marshes than that of Montluel—wrote in answer, that he had never seen phthisical or scrofulous individuals in the communes of Marlieux, Versailleux, Lachapelle, or Saint Nizier-le-Desert, all situate in the Pays de Dombes, where the stagnant marshes are very numerous, and the population very unhealthy. He added, that so convinced was he of the advantages phthisical patients would derive from a residence in such localities, that he purposed to establish a *maison de santé* in an ancient chateau which had been abandoned by its proprietor on account of its general unhealthiness.

M. Pacoud, of Bourg, during the course of a practice of forty-five years, had not met with a single instance of phthisis during all that time. The hospital of Bourg, which receives its patients from all the surrounding marshy districts, does not contain in its records the history of even a single case of this disease. M. Pacoud adds, however, that children who are boarded away from home, and consequently leave those marshy districts in early life, are occasionally affected with consumption, but removal to the marshy district does not appear to remove the disease. Dr. Hudelet, of Bourg, bears witness to the same fact of the infrequency of phthisis in the marshy districts of Villars, Marlieux, Saint-Nizier; he never saw a single case of that disease.

Dr. Monfrin, physician to the Hospital Chatillon-les-Dombes, states that phthisis is very rare in the country of the Dombes; for three years that the Mayor of Chatillon and he kept registers of the deaths in the town, out of four hundred deaths, including those in the hospitals, only eight were from phthisis, and one of these was a stranger. The canton of Chatillon, it may be remarked, is not situated in the most marshy district of the Dombes.

MM. Rater and Candy, of Lyons, who had formerly practised in the marshy plains of Forez, bear evidence to the rarity of phthisis in that locality. M. Candy, however, stated that it has become more frequent of late years since several of the marshes have been drained.

M. Jolly concurs in the statement as to the rarity of phthisis in the marshy district of Arcachon.

From all these authentic facts, M. Nepple concludes that it is impossible to doubt the fact of the rarity of tubercular diseases in marshy districts, whatever explanation may be given of its cause.—*Bulletin de l'Acad. Royale de Méd.*, 7 Nov. 1843.

10. *New Diagnostic signs in Febrile and other Diseases, which present a Typhoid character.*—According to M. RANQUE, the pathognomonic sign of a fever which is likely to prove serious, is a coating like mother-of-pearl, of the gums between the molar teeth. If, in addition, leeches have been applied to the patient, the bites will assume the colour of indigo. This last symptom is quite characteristic, and, when observed, we may rest assured that however mild the symptoms may appear, they will, before long, assume a very serious appearance. But M. Ranque has gone further than this. He states, that when this pearly tint between the molar teeth disappears under the pressure of the finger, the typhoid symptoms will not be very severe. But if the exudation be thick, not disappearing under pressure, and occupying many of the interstices between the teeth, we may look for a severe and long-continued attack. As the disease

advances, the colour of the appearances changes; it becomes black, and what are called sordes (*fuliginosites*) appear. The same remarks apply to the bites of leeches. The deeper the indigo colour, the more serious is the attack likely to prove. If these signs exist at the outset of an attack of pyrexia, they are, according to the author, infallible marks, either of a typhoid fever, or of inflammation, accompanied by symptoms of a typhoid character.—*Journ. de Méd. et de Chirurg. Pratiques*, Jan. 1844.

11. *Softening of the Spinal Nervous Substance.—Inordinate Venery.—Case of General Paralysis.* By SIR B. BRODIE.—One of the most common causes of paraplegia, commencing in the lower limbs, is a morbid change of the minute structure of the spinal cord; that is to say, softening or *ramollissement*. The change that occurs at other times in the brain takes place in the spinal cord after a concussion of the spine. A very common effect of concussion is to injure its minute structure, and then, to a greater or less extent, it dissolves itself into a substance like cream. In this state of softening it first loses its natural consistency, but still retains the character of solid substance. By and by it becomes completely melted down to a substance like cream; the membranes can hardly be lifted out, and when placed in water, the spinal cord floats, and the membranes remain by themselves. What produces this softening I cannot say. Some have said that it is inflammation, but certainly there are no marks of inflammation; there is no unusual vascularity preceeding or accompanying the softening; there are no vessels loaded with blood, and, indeed, the parts are rather less vascular than natural. All that can be said is, that there is some peculiar change of structure, the proximate cause of which we cannot explain, nor very often the remote cause. A young lady had this state of the spinal cord, and ultimately died from it. She was a healthy young woman in other respects, and there was nothing to explain it. There is one very common cause of it—not in young women but in men—men who rank among what is called the *better* classes, which, I suppose, means only that they are richer than others; at any rate, they are not better in the point I am going to mention. There is a class of people, in London especially, who have no employment, who have large fortunes, and who spend half their time in intriguing with women; and in many instances you may trace the disease of the spinal cord to over-indulgence in sexual intercourse. Though we know more of the appearances after death than did the ancients, yet they very well described paralysis arising from this cause when they spoke of it as *tubes dorsalis*.

It has been said that paraplegia—paralysis of the lower limbs generally—depends on disease of the brain and not of the spinal marrow. This was maintained by Dr. Baillie, and published in a paper of his in the Transactions of the College of Physicians; but he gives no facts on which the opinion is grounded. It seems to have been a notion taken up by him without any facts to justify it. However, there is reason to believe that, under certain circumstances, disease of the brain may produce paralysis in the lower limbs before it produces it in the upper. I examined the body of a man who was paraplegic, and I found water in the ventricles of the brain, but no disease connected with the spinal marrow. That you may have disease, however, in the brain and in the spinal marrow, combined in the same individual, there can be no doubt. Some of those young men who, from foolish habits, become paraplegic in the lower limbs, have also cerebral symptoms. There may be softening of the lower half of the spinal marrow, and of a good part of the brain. I think that if there is an entire absence of cerebral symptoms, you have a right to conclude that the disease does not exist in the brain, but is confined to the parts below; if, however, the patient says he has double vision, if you find one pupil dilated, and not the other, and there be pain in the head and giddiness, you have a right to conclude that there is disease in the brain; but still, if there were absolute paralysis, I should conclude that there was disease in the spine also.

The case which I am about to mention is a very remarkable one. About nine years ago I was sent for into Lincolnshire to see a gentleman who was

paralytic in the lower limbs. The symptoms of paralysis had exhibited themselves eight years before, and at the same time there was pain referred to the epigastrium. The disease had now extended upwards, the arms were beginning to be affected, and there was also dilatation of the pupil of one eye; but at the commencement it was a case of regular paraplegia. Neither my advice nor that of any one else did any good, and the disease was left alone. Ten years afterwards his wife was very ill, and he was brought with her to London. She came for medical advice; but his case being considered hopeless he did not consult any one. He was now completely paralytic in his limbs and arms, he could scarcely speak, and he could only just swallow. He lay as though the head were alive and nothing else. His wife died, and he soon followed. I obtained leave to examine the body. Mr. Tatum and another friend accompanied me. We all three made a very careful examination. What we might have found if the spinal cord and brain had been macerated in alcohol, and if we had traced the fibres and examined them with a microscope, I cannot pretend to say; but, with such an examination as we could make in a private house in the course of a couple of hours devoted to it, we could not detect any morbid appearances at all. The spinal cord seemed rather smaller in size than usual, there was some little effusion between the pia mater and the arachnoid, and at the upper part of the spinal cord there was manifestly a blush. The patient had felt for a considerable time pain in the epigastrium, and I thought that might indicate some disease in the plexus there. We took it home with us; Mr. Tatum dissected it with the greatest care, but nothing could be discovered. Do not, however, suppose that I believe this to be a mere functional disease, because we see nothing after death. The minute organization of the brain and spinal marrow is not visible to the naked eye, and even with the microscope you can only trace it a little way. I doubt not that there was some defect in the minute organization of the body, some change of structure not perceptible to us. I cannot suppose that such a train of symptoms could occur from mere functional disease.—*Lond. & Edin. Monthly Journ. Med. Sci.*, April, 1844.

12. *Neuralgia cured by Inoculation of Salts of Morphia.*—Dr. JAQUES, of Antwerp, being called into a young girl who had a very obstinate supra-orbital neuralgia, had in vain employed antispasmodics, the sulphate of quinine, and the salts of morphia by the endermic method: he conceived the happy idea of introducing some sulphate of morphia by inoculation under the skin. For this purpose, having dissolved two or three centigrammes of the sulphate of morphia in a small quantity of water on a bit of glass, he took up this solution by means of a vaccinating lancet, and made about forty punctures over the seat of pain; a marked relief ensued. The operation was repeated for some days, and the patient, who had been for a long time ill, was completely cured. The same plan of treatment has been applied in the treatment of sciatica; the inoculations have been made the whole length of the sciatic nerve, and the patients, on whom all other kinds of treatment had produced no effect, have been completely cured. Each puncture is immediately followed by a white elevation of the skin, which disappears on the next day. Poultices are useful to subdue the irritation arising from the punctures.

This is a certain and speedy mode of administering energetic medicines; and it is probable that it may usefully be had recourse to in many other circumstances.—*Lond. and Ed. Month. Journ. Med. Sci.*, May 1844, from *Bouchardat's Annuaire de Therap.* for 1844.

13. *Scirrhus of the Pancreas.*—Dr. BATTERSBY read before the Surgical Society of Ireland, March 30, a remarkable case of scirrhus of the pancreas—a disease of rare occurrence.

The subject of the case was a woman between 55 and 60 years of age, who had been remarkable for her *embonpoint*, and had always enjoyed good health until two years previously, when she became subject to severe pains in the back, which affected also the shoulders and arms, and were supposed to be

rheumatic. After the lapse of a year, there was discovered in the epigastric region a deep-seated pulsating tumour, about the size and shape of an orange, having a regular diastolic enlargement synchronous with the pulse, and a well marked bruit de soufflet. Her disease was in consequence considered to be aneurism of the aorta. She also suffered from fluid eructations, and an obscure deep-seated pain. Dr. Battersby found her extremely emaciated. There was a marked fulness in the epigastric region, in which was to be felt a deep-seated, solid, and fixed induration, having a flattened surface and defined outline inferiorly. It was without pulsation, but a bruit de soufflet was audible on the application of the stethoscope over it in the course of the aorta. She suffered much from constipation, from symptoms of contraction of the colon, and from temporary dysphagia. There were occasional eructations of a clear watery fluid, and her mouth seemed always full of saliva. The tongue was pale and clean. Before death the limbs became highly anasarctous, and there was some fluid in the abdomen. On examination after death, the colon and cardiac orifice of the stomach were found narrowed. The pancreas was universally hard and enlarged, and had lost every trace of its natural structure. Near the centre of this gland, and at its lower edge, existed a thin, translucent, horny cyst, which was slightly prominent, about the size of a walnut, and lay directly over the aorta. Its base was surrounded by a hard cartilaginous scirrhus formation, which, in part, projected into it. The rest of the gland was composed of a less solid, but unyielding heavy substance, apparently made of dense closely interwoven membranous bands. The lining membrane of the aorta was diseased, and in some points was eroded. The error committed of mistaking the tumour of the pancreas for aneurism of the aorta was due, no doubt, to the early development of the cyst, which, probably in the progress of the disease, had its fluid contents lessened by the encroachment of the scirrhus, while, the close union of the latter to the spine having removed the impulse of the aorta, towards the conclusion no other symptom remained but the bruit de soufflet which was not of itself likely to mislead. Ptyalism, as remarked by Dr. Battersby in this case, has not been observed, in connection with diseases of the pancreas, by any writer in our language, so far as he is aware, although it has been frequently noticed by our continental brethren. Dr. B. thinks that this symptom may serve as a guide towards the diagnosis of pancreatic diseases of which the other symptoms are in general very obscure and ambiguous, and in this he is confirmed by the facts of a case communicated recently to him by Mr. Robert Macdonnell, in which the cleanness and great moisture of the tongue and mouth attracted the attention of three German physicians in attendance on Dr. Graves' Clinique, who, from this circumstance, principally, were led to pronounce the patient to labour under scirrhus of the pancreas, and although the post-mortem examination showed that the disease was not confined to the pancreas, yet that gland was sufficiently engaged to confirm the accuracy of their opinion, founded on the extreme moisture and the pale and macerated appearance of the tongue.—*Dublin Med. Press*, April 17, 1844.

14. *Scirrhus Tumour in Spinal Marrow.* By M. BOUILLAUD.—A man, about 24 years of age, was admitted, on the 10th of June, into the hospital of La Charité. Since winter he had been complaining of flying rheumatic pains, which for the last two months had become more severe, had been confined to the neck and shoulders, and obliged him to keep his bed. On a careful examination, the spinous process of the lowest cervical vertebra was found projecting more than usual, and pressure on it was painful. There was no loss of movement or of sensation in any part of the body. Defecation and micturition were free, the appetite was good, tongue clean, pulse 92, and heat normal. He was bled, blistered, and put on low diet. On the 19th sleeplessness, with severe headache, came on; his pulse fell to 52, was irregular and intermittent. On the 22d his countenance had a semi-idiotic look, he heard with difficulty, had frontal headache and ringing in his ears. On the 25th, delirium and jactitation were observed; his face was pale, lips livid, respiration impeded, sighing, and

semi-stertorous, jaws closed; slight stiffness of the limbs was also remarked, and urine and fæces passed involuntarily. He died at ten of the morning.

The spinal marrow was found surrounded by a copious effusion of limpid viscid serous fluid. On the lower portion of the cervical spinal marrow, a considerable swelling was remarked, which, when cut into, exhibited a tumour of about the size and shape of a large olive. This tumour was unconnected with the surrounding marrow, was on its posterior surface, and compressed it into two flat ribands, which were softened and injected. The tumour itself presented, when cut into, all the characters of the true scirrhus degeneration. At all other points the spinal marrow was healthy. Nothing remarkable was noticed in the brain; when cut into, it presented few more bloody points than usual. A tubercular mass was found on the upper side of the left lung. The other organs were healthy.—*Ed. Med. and Surg. Journ.*, April 1844, from *L'Experience*, Oct. 19, 1843.

15. *Elephantiasis cured by Guaiac and Iodine.* By M. CAZENAVE.—A woman in 1833, remarked a fulness in her right leg, which, without pain, gradually increased, so that she could not pull her stocking over it. It extended over the whole limb, and gradually increased in size, till the articulations of the hip and knee-joints could scarcely be seen, and the limb resembled a solid hard fleshy column. When it was in this enormously swollen state, she had two successive attacks of erysipelas in it, eight years after the limb began to enlarge. In 1841 she came under M. Cazenave's care. The general form of the limb justified the name elephant's foot. All the usual depressions and projections seen on the healthy limb had disappeared, under the enormous hypertrophy of the skin and cellular tissue. Thigh and leg were confounded in one shapeless fleshy column. Two grooves, formed by a thick overhanging fold of skin, alone marked the situations of the thigh and knee-joints. The condyles of the femur and the patella could not be distinguished. The heel and sole of the foot were the only places not involved in the disease. The dorsum of the foot was enormously swollen, and overhung the sole. The skin was of a dead-white colour, but sound. No induration of glands or blood-vessels could be detected. The whole tumour had a solid resistant feel, giving a sensation as if pressure were made on a thick ball of India rubber. There was no pain, but the sensibility was notably deficient.

She was ordered a strong decoction of guaiac and mezereon; the leg was carefully bandaged from the toes, and every other day the bandages were removed, and vapour douches applied to the surface, and an ointment of hydriodate of potash rubbed on. She was put on generous diet and wine, and kept in bed. This treatment was continued for a little more than three months, by which time the leg was reduced to its former dimensions, being then equal in point of size to the sound one, with the exception of a part on the dorsum of the foot.

M. Cazenave states, that he has met with several other cases, which have been all more or less benefited, and some even cured by this plan of treatment.—*Ibid.* from *Ibid.*, Sept. 28, 1843.

16. *Contraction of the foramen lacerum posterius, in maniacs and suicides.*—Dr. KASLOFF, Prof. of Anat. in the University of Kiew, has for several years directed his attention to the state of the great vessels of the brain in cases of insanity, and finds himself forced to the conclusion, that insanity in all its forms is most intimately connected with derangement of the circulation within the cranium. In the course of the year 1841, he had particular occasion to remark, that the foramen lacerum posterius was very commonly contracted in the skulls of those who had died insane, or who had committed suicide. The contraction generally occurred on one side only, rarely on both. In many cases he found the foramen, where it transmits the internal jugular vein, reduced to a mere narrow slit, which with difficulty admitted a common probe. The furrow for the lateral sinus, which led to this contracted foramen lacerum, was neither so broad nor so deep as in ordinary skulls, and the thimble-like cavity was almost level

with the base of the cranium. The jugular vein that occupied it could not have had half, frequently not one-third, and occasionally not one-fourth of its usual diameter. The canalis caroticus of the corresponding side did not appear to have undergone any similar contraction of its diameter. Along with the contraction of the foramen lacerum posterius, however, a conspicuous enlargement of those foramina which transmit veins from the interior to the exterior of the skull was very regularly observed: the foramen mastoideum, and foramen parietale of the corresponding side, for example, were found of two Paris lines in diameter, and supernumerary foramina presented themselves in situations where none are commonly seen.

In every skull of a maniac or suicide in the anatomical collection at Kiew, Professor Kasloff observed the contraction of the foramen lacerum posterius in greater or less degree upon one or both sides; in seventeen of the twenty-one skulls belonging to the above category, the peculiarity was remarkably displayed. On comparing the foramina lacera of the two sides, he found that where the one on the healthy side was four and a half Parisian lines in diameter, the contracted opening measured but two lines; where the healthy orifice measured four and a quarter lines, the contracted one still measured only two lines; where the former measured three and a half, and two and a half lines, the latter measured but one, and one and a half line.

In quoting these facts, Professor Kasloff still admits that he has examined other skulls of maniacs where he observed nothing of the same kind. It is impossible, however, not to regard the instances quoted as full of interest for the pathogeny of insanity. It seems quite certain that the afflux through the carotid and basilar arteries continuing unimpeded, if any, even a very slight hindrance to the return of the blood by one of its principal channels be encountered, a stasis or accumulation within the vessels of the brain must of necessity ensue, and that this can be without influence upon that important organ, "the soul's frail dwelling-place," is admitted on all hands to be impossible. Now, here is a permanent obstacle to the due return of the blood from the brain, which, if it have not entirely escaped the notice of pathological anatomists, which it has not, appears never to have been viewed till now in its legitimate connection with and bearing upon functional derangement or organic disease of the brain.—*Oppenheim Zeitschrift für die gesammte Med.*, Jan. 1844.

17. *Antipsoric remedies*.—Various new modes of curing the itch appear from time to time; and if it be true that the thing needful is the destruction of the itch insect, it is probable that some remedy may be brought into general use which may be equally certain, and less noisome, than the common sulphur ointment. M. Dornblueth recommends a combination of two parts of common soap and one of powdered white hellebore, made into a paste with boiling water. This must be daily rubbed into the parts affected, until the itching is succeeded by a burning sensation, after which daily ablutions and clean linen complete the cure.

M. Aubé declares that one friction with oil of turpentine effects a perfect cure; M. Cazenave says the same of a solution of iodine; and it is also stated that all essential oils, especially those of anise and peppermint, possess the same properties.—*Prov. Med. Journ.*, 24 Feb. 1844, from *Bouchardat's Annuaire de Thérapeutique*.

18. *Treatment of Scald Head*.—A family named Mahon enjoy an hereditary celebrity for the cure of this troublesome malady; the method which they employ consisting first of cutting the hair short, and softening the crusts with poultices or hog's lard, so as to remove them; and then using every other day a depilatory ointment or powder; a fine comb being passed through the hair on the alternate days, so as to remove the hair which has been loosened by the depilatory. The powder which they employ has been found by analysis to be entirely composed of the ashes of vegetables, and the ointment is made of this powder with hog's lard. Now this treatment is not peculiar to the MM. Mahon,

for Sydenham used to recommend an ointment composed of equal parts of the oils of almonds and of bays, and of the ashes of wormwood, which was applied every morning, the head being covered with a pig's bladder. We perfectly well recollect seeing some children a short time since, who had been treated by a quack with an ointment evidently composed of hog's lard and potass, the head being directed to be covered with a bladder.—*Ibid.*

19. *Nervous Tremor in Children.*—Dr. P. HENNIS GREEN relates in the *Provincial Medical Journal* (Feb. 24, 1844), three cases of nervous tremors, two occurring in children of 13, and the third in one of 11 years of age.

Dr. G. considers it as one of those purely nervous disorders which often pass away as rapidly as they have appeared, and leave behind no trace of organic lesion to account for the variety or intensity of the symptoms. The chief characteristic of the disease is an equable and rapid oscillation of the limbs, in the line of flexion and extension. It bears some resemblance to chorea, from which it is distinguished by the peculiar oscillatory movement, very different from the irregular and involuntary motions observable in the latter named affection. The causes of nervous tremor in the adult are various; in the child the exciting causes seem to be the same, so far, at least, as we can infer from the cases on record. In the three examples which Dr. G. has related, the causes of the disease were grief, obstruction of the menstrual function, and the action of lead on the system.

The absence of headache—of convulsive movements—of contraction of the limbs—and of other lesions of the motor and sensitive powers, will aid us in determining the true nature of the disease. Its treatment must in most cases depend on the nature of the affection with which the tremor is associated. The case in which the tremor was produced by lead, it was speedily removed by active purging.

20. *Large Doses of Nitrate of Potass.* By HENRY BENNET.—I have, during several years, seen the nitrate of potass extensively administered in *very large doses*, and have myself often thus prescribed it. It certainly is an irritant poison, and capable of giving rise, as such, to inflammation, and perforation of the stomach, if administered in large doses, but only when taken in the form of powder, or of a very concentrated solution. When largely diluted in a fluid, one or even two ounces may be taken in the twenty-four hours, not only without giving rise to any toxic symptoms, but with great benefit in certain stages of the economy. When the nitrate of potass is given in a small compass, and in a single dose, half an ounce will act as an irritant poison, and occasion acute inflammation of the mucous surfaces; but if it is largely diluted a much greater quantity *may* prove innocuous, even if given in one dose, and *is sure* to prove so if administered in divided doses during the twenty-four hours.

It is principally in acute rheumatism that large doses of the nitrate of potass have been given. From some researches made by one of my friends and late colleagues, M. Aran (*Journ. des Connaiss. Medico-Chirur.*, 1841), it would appear that the nitrate of potass was used in large doses in the treatment of rheumatism during the last century by several English physicians, whose names I am unable to mention, not having M. Aran's paper by me. I believe, that M. Gendrin, the physician to the Hôpital de la Pitié, is, of all modern physicians, the one who has paid the greatest attention to the therapeutic properties of large doses of the nitrate of potass in rheumatism. The number of cases which I have seen thus treated must, therefore, be great when we consider that more than two thousand patients sojourn in M. Gendrin's wards each year. Indeed, although I have kept no statistical record, I should say that I have seen treated, or treated myself, at La Pitié, in this manner at least seventy or eighty persons labouring under acute rheumatism.

With women we generally commenced with six drachms, rapidly increasing the quantity to eight, ten, or twelve. With men we generally began at once with an ounce, gradually increasing the dose to ten, twelve, fourteen, or sixteen

drachms. In the very great proportion of cases, however, M. Gendrin did not exceed the dose of twelve drachms, or approve of its being exceeded. The salt was always administered dissolved in a large quantity of barley-water, sweetened with sugar, the proportion being about half an ounce to a pint and a half or two pints of fluid. This was the *only* beverage allowed to the patient, and taken by him as required.

In this large number of cases I do not remember once seeing any toxicological symptoms produced. The secretions of the skin and kidneys were generally increased, and sometimes those of the intestinal canal, but the principal action of the nitre seemed to be a sedative action, the pulse generally falling rapidly, both as regards frequency and strength. It is, no doubt, to this sedative contra-stimulant action that we must look to explain its undeniable efficacy in the treatment of acute rheumatism.

I do not recollect having once seen any symptoms of renal irritation or inflammation produced by these large doses of nitrate of potass, and have never heard M. Gendrin, whose experience on the subject is necessarily very great, say that he had met with such a case. M. Martin-Solon, in the communication which he made last October to the Academy, on the treatment of acute rheumatism by large doses of nitre, does not mention having observed a single instance of renal affection to the thirty-three cases which he had treated by doses varying from one to two ounces. It cannot be said of these two physicians that renal affections may have presented themselves without their having perceived it, as they are both accurate and conscientious observers, and have both paid particular attention to the pathology of the kidneys. M. Martin-Solon, indeed, is the author of one of the best French works on "albuminuria" which has yet appeared.

I have myself not only administered an ounce or more of nitre in the four-and-twenty-hours, for many days consecutively, in acute rheumatism, but also in puerperal fever and in other inflammatory diseases, with, I think, marked benefit, and without ever observing any toxicological symptom.—*Lond. & Edin. Month. Journ. Med. Sci.*, 1844, from *Lancet*, Feb. 10, 1844.

21. *Sea-side Air as a Remedial Agent.* By M. GUASTALLA, of Trieste.—The influence of a marine atmosphere in the treatment of various diseases has been recognized by physicians from the earliest times. But though daily experiencing its advantages, they were ignorant of the true principles on which its salutary effects depended. And even since the discovery of the real constitution of the atmosphere, various opinions have prevailed on this point. At first it was thought that the maritime air contained a larger proportion of oxygen than other air, that gas being disengaged in the course of the incessant decomposition of sea-water. Very soon, however, sea-salt was supposed to have been recognized as entering into the composition of sea-air, and works were written recommending voyages as a means of absorbing this substance by the lungs in various diseases thought likely to benefit by it. Strange to say, the early hypothesis of the greater oxygenation of sea-air has been revived in the present day, and a M. Assegond has maintained that in phthisis complicated with inflammation, the respiration of sea-air is injurious, owing to its being too stimulant from its higher degree of oxygenation. All the great authorities in chemistry, however, are decidedly opposed to the idea of any differences in the essential elements of the air of different districts; and if the air of the country is more salubrious than that of towns, or that of marshes injurious, or that of the sea possessed of peculiar qualities, it appears to be owing to the circumstance of these varieties of air holding in suspension various foreign admixtures, for it is established that the relative proportions of the essential constituents of the atmosphere are everywhere the same. What, then, are the accidental admixtures to which marine air owes its peculiar qualities? They are precisely those which are to be looked for from the nature of the case,—chloride of sodium and free muriatic acid. But this statement must be received with some degree of qualification. It has been proved by Berzelius that the air of the sea-side contains no acid or salt in combination with itself, and that the vapours rising into

it are purely aqueous. But during the agitation of the sea, and particularly in high winds, and where the waves break violently upon the beach, a quantity of natural sea water is driven into the air, and may be conveyed to a greater or less distance according to circumstances. Thus, then, by whatever means they may have come there, sea air does contain in a state of suspension, certain proportions of sea salt, and of muriatic acid, which are inspired into the lungs, and there absorbed and conveyed into the blood. Now, the experiments of Albers and others on the respiration and absorption of these substances used medicinally, prove that, though at first chlorinated respirations irritate the nose, the eyes, and the bronchial mucous membrane, yet, when absorbed, they very speedily exert a powerful antiphlogistic influence in chronic inflammations of the chest. In addition, sea-air contains very little carbonic acid, and so is purer than the air of towns. The free ventilation on the sea-side also prevents mephitic particles from accumulating as they often do in inland situations. The aqueous vapour constantly rising into the air from the sea, is another favourable circumstance rendering it fit for respiration in a number of diseases which we know are aggravated by breathing a drier atmosphere. From the same cause, the temperature of the sea-side is milder and less liable to sudden changes. These various circumstances explain the undoubted healthiness of sea-ports and islands. Practitioners in sea-port towns, so situated as to be fully exposed to the constant influence of sea-air, have been struck with the less degree of intensity which inflammatory affections present there, compared with what they do in inland situations. It is impossible, therefore to attach any weight to the statement of some authors, that sea-air is exciting, and injurious to phthisical patients. There is a period of the disease, that of suppuration, when no means will prolong life, but it is contrary to fact to suppose that the aid of the sea will hasten death. So convinced was Laennec of the importance of this remedy in chronic diseases of the chest, that he was induced to establish a kind of marine atmosphere in the wards of the Hôpital de la Charité, by means of fresh marine plants placed around the beds, and by making the patients take infusions of such plants. In such a case, however, the resources of art must of necessity be much inferior to those of nature, and the phthisical patients sent to hospitals are generally in far too advanced a stage of the malady to benefit much by these feeble imitations. From these and many other analogous observations which might be quoted, it results, that in chronic inflammations of the chest, sea-air is of unquestionable benefit, in so far at least, that if it does not cure them all, it so far alleviates them, that they cease to be insupportable or incompatible with life. Farther, that instead of sending phthisical patients to the country to breathe the dry air of mountainous regions, they should be sent on sea-voyages or else to some well chosen, healthy, and favourably situated part of the sea-shore.—*Ibid.*, from *Annales de Thérapeutique*, Nov. 1843.

22. *Successful Treatment of Ovarian Dropsy without the Abdominal Section.*—J. B. BROWN, Esq., of London, relates in the *Lancet*, (May 4, 1844) four cases of, as he avers ovarian dropsy, cured by mercurials, diuretics, tonics, and *tight bandaging*, followed by tapping.

The following are the principal points of treatment.

“1. Constitutional.—Mercurials administered internally, as alteratives, and externally by friction over the abdomen, and continued till the gums are slightly, yet decidedly affected, and this affection must be continued for some weeks. I lay particular stress upon this point. At the same time diuretics must be given, and after the first week tonics should be combined with them. The food should consist of light animal diet, and should be unstimulating, and the patient should take daily exercise in the air.

“2. Local treatment.—The careful and constant application of *tight flannel bandaging*, so as to produce considerable pressure over the tumour. When it is proved that the abnormal action has been checked by a positive decrease of the tumour and a continuation of such decrease, or by a positive *non-increase* for some weeks, then the cyst should be tapped, and all its fluid evacuated.

“3. After-treatment.—Accurate padding and *tight bandaging* over the cyst

and body generally, for two or three weeks after tapping, and the medicine and friction continued for at least six weeks. I would particularly wish to enforce the importance of the after-treatment, as on that depends, very much, the success or failure of the case.

"It probably will, and may be argued," he adds, "by many, that these cases were not truly *ovarian*, and thus endeavour to do away with any merit that would otherwise arise from the treatment; but I would draw attention to the *facts*, more particularly of the first case. I saw the young lady when the tumour was very small and deeply-seated in the iliac fossa. I watched its growth from time to time, and distinctly marked its circumscribed edges and felt the fluid when it was first rising out of the pelvis; and, moreover, my friend, Dr. Locock, whose experience in such cases is much greater than my own, at once pronounced it *ovarian*, as well as all the other eminent men who saw the patient. There can, therefore, I apprehend, be no doubt as to its character, nor do I think, when coupled with the succeeding cases, can there be any fear of its permanent cure."

23. *Pathological and histological researches on inflammation of the nervous centres.*—We gave in our number for January last, p. 200, the general conclusions of Dr. J. H. BENNETT, relative to inflammation of the nervous centres. We return again to this very valuable paper in order to give some further account of the results of the author's researches.

On the nature of softenings of the nervous centres.—Much uncertainty exists in regard to the nature of the softenings so often met with. Dr. Bennett is of opinion that two kinds of cerebral and spinal softening exist, an inflammatory and a non-inflammatory, which may always be distinguished from each other by means of the microscope.

1. *Character of inflammatory softening.*—On examining under the microscope a portion of inflamed and softened nervous tissue, in addition to the normal, tubular, and granular structure, there will be found, 1st, exudation granules coating the vessels, or floating loose, either isolated or in the form of masses; 2dly, exudation corpuscles, with distinct cell-walls, and sometimes nucleated. The more pulsatious and diffused the softening is, the more numerous are the granules and corpuscles. The nervous tubes and normal structures also then become more and more broken down. With regard to the *nature* of inflammatory softening, it appears to result from the active growth, development, and breaking-down of nucleated cells (exudation corpuscles) in the effused blood plasma. "It is not a mere maceration of the textures in serum. No doubt the serum performs an essential part in the process, inasmuch as moisture is necessary for every species of growth. But we are of opinion that softening cannot be considered as dependent on inflammation without the existence of these bodies. So far from being connected, as some have supposed, with diminished nutrition, it is, in point of fact, an increased nutrition in the excess of blood plasma effused."

2. *Character of non-inflammatory softening.*—Here the cylindrical and varicose tubes of the part are found more soft and easily separable from each other. They have more or less lost their natural firmness and consistence; are readily torn across; the varicosities are easily enlarged by pressure, and, when separated or broken off, assume a globular form. The tubes, also, are more or less broken down. No exudation granules, masses or corpuscles can be detected.

The causes of non-inflammatory softening are four in number: 1st, mechanical violence in exposing the nervous centres; 2d, a mechanical breaking up of the nervous tissue, by hæmorrhagic extravasations, either in mass or infiltrated in small isolated points, constituting capillary apoplexy; 3d, the mere imbibition of effused serum, which loosens the connection between the nervous tubes, and diminishes the consistence of the nervous tissue; 4th, the process of putrefaction.

Some authors have endeavoured to distinguish inflammatory from non-inflammatory softening, by the presence in the former of a zone of red vessels, or of purulent matter; this distinction, however, according to Dr. Bennett, is not a valid

one, inasmuch as, according to his observations, the zone of red vessels is very rarely met with in inflammatory softening, and the infiltration of purulent matter has no real existence. The opinions which attribute softening to a lesion *sui generis*, to diminution of nutrition, to gangrene, obstruction of arteries, &c., are also considered hypothetical in the highest degree.

The symptoms which accompany the two forms of softening differ widely. In twenty-four observations, in which cerebral softening was discovered, exudation corpuscles existed in eighteen, in the other six no traces of these bodies could be found. In four, however, out of the eighteen cases of inflammatory softening, there also existed in another part of the brain non-inflammatory softening. In the fourteen cases of simple inflammatory softening, well-marked symptoms invariably existed, such as loss of consciousness, preceded or followed by dulness of intellect, contraction and rigidity of the extremities, or paralysis.

In three of the six cases of simple non-inflammatory softening, there was a large extravasation into one side of the brain, followed by sudden coma and hemiplegia. In the fourth and fifth cases there was sudden loss of consciousness, with convulsions, but no paralysis or contraction, and on dissection, capillary apoplexia, with central softening, was found. In the sixth case, with extensive softening without effusion of blood, there was no disturbance of intellect, no contraction, no paralysis. Dr. Bennett considers that the softening arose from mechanical destruction of the tissue in the first three cases, and from post mortem action in the three last.

Of the four cases in which both kinds of softening existed, in the first there was hemiplegia of the left side only. Softening was found in both corpora striata, but exudation corpuscles only in the right, the side opposite to the paralysis. In the second case there was impaired intelligence, loss of speech, disorganization of the eye, and convulsions before death; there was no paralysis. Abscesses surrounded by inflammatory softening were found in the external portion of the left anterior and middle cerebral lobes, explaining the symptoms present; but there was also non-inflammatory softening of the central parts of the brain producing no symptoms whatever. In the third case there was paralysis of both arms, contraction of the right, and tetanic spasms of the muscles of the mouth and neck. Inflammatory softening existed in the pons varolii, extending more to the left side; non-inflammatory softening of the right corpus striatum. In the fourth case there was headache, prominence of the eyeball, and coma, but no paralysis. A fungoid tumour was found at the base of the orbit, and an abscess in the anterior lobe of the brain, surrounded by inflammatory softening. There was also central yellow softening of the left hemisphere producing no symptoms.

Dr. Bennett considers that much of the obscurity which attaches to inflammation of the nervous centres arises from the fact that pathologists have hitherto confounded softening dependent on inflammation, with softening occasioned by post mortem changes or mechanical violence, and, consequently, have been astonished to discover extensive softening after death, no corresponding symptoms having existed during life; on the other hand, where well-marked symptoms have been present, nothing has been discovered after death, though inflammation actually existed, capable of demonstration by the microscope alone, which shows the presence of exudation corpuscles.

Dr. Bennett next proceeds to make some remarks on the colour of softenings; the general relation between the symptoms and the seat of the lesion; on contraction of the limbs as a symptom of inflammatory softening; on the curability of softening; and on the connection between softening and hæmorrhage.

1. *Colour of cerebral and spinal softenings.*—Softening may be tinged red, yellow, white, or gray, without, however, any essential difference as to structure. As a general rule, it would appear that the red may be considered as acute, the yellow subacute, and the white or gray chronic softening; but this is by no means invariable.

The red and yellow colour is evidently connected with the presence of blood or its colouring matter. Sometimes the yellow softening is contained within

the reddened portion, and somewhat resembles a purulent collection. At others, it surrounds the extravasation of blood, as is most common. Some have supposed the purulent infiltration is the cause of yellow softening, but such does not agree with the observations of Dr. Bennett, who has never met with a pus corpuscle in softened brain or spinal marrow.

In the fawn-coloured softenings, which are frequently observed independent of extravasated blood, the author has always found exudation corpuscles, and thinks it very probable that the fawn tint is attributable to the presence of these bodies, which are usually of a brownish or blackish colour.

White softenings are generally non-inflammatory; in some cases, however, they contain numerous exudation corpuscles, which are then colourless.

2. *General relation between the symptoms and the seat of the inflammatory softening.*—In ten cases examined by Dr. Bennett, lesions of the central parts of the brain on one side were discovered; the symptoms during life consisted of contraction or paralysis of the extremities on the side opposite to the disease. In six cases there were lesions of the central parts on both sides; symptoms during life, contraction or paralysis on both sides of the body. In four cases, lesions of the peripheral parts only existed; this group was characterized by the absence of paralysis or contraction of the extremities, and by either delirium or coma. This analysis, it will be seen, is favourable to the hypothesis which ascribes motion and sensation to the central parts, intelligence to the surface.

3. *Contraction of the limbs in inflammatory softening, and in hæmorrhage.*—Some dispute has taken place as to the presence of more or less contraction or rigidity of the limbs in inflammatory softening, some authors contending that it is a highly characteristic symptom, others asserting that its presence, when it does occur, is altogether incidental. Dr. Bennett is of opinion that, in idiopathic inflammatory softening of the brain, contraction in one or more limbs is a common symptom. In simple hæmorrhage into the brain, on the other hand, without the existence of any inflammation, contraction seldom, if ever, occurs.

4. *The curability of cerebral and spinal softenings.*—Though numerous observations have fully demonstrated the possibility of this occurrence, Dr. Bennett considers that the anatomical marks or appearances, by means of which pathologists have endeavoured to demonstrate the fact, are very fallacious. "The slight indurations occasionally met with in the nervous substance are spoken of by some authors as *cicatrices*—a term, we think, wholly inapplicable to them. Durand-Fardel alludes to the softening resembling chalky milk as a proof of the passage of the lesion into a state of cure, and Dr. Sims speaks of the fawn-coloured cavities as evincing the same fact." In one case of hemiplegia of long standing, in which the chalky milk softening was found, the granules of the exudation corpuscles were seen to be large, equal in size, and very transparent, in fact presenting a very unusual appearance; it is not improbable, therefore, that the granules were undergoing absorption; and consequently, the opinion of Durand-Fardel may be correct. On the other hand, the appearances described by Dr. Sims were met with in one case, but here, on the application of the microscope, numerous exudation corpuscles and granules were met with, precisely similar to those seen in parts undoubtedly affected with acute inflammation. Intense rigidity of the opposite side of the body also existed, without any other lesion than this which could at all account for it. Dr. Bennett's opinion, therefore, is, that the fawn-coloured spots described by Dr. Sims are no evidence of the cure of inflammatory softening.

5. *The connection between softening and hæmorrhage.*—It has long been a question, does the hæmorrhage precede and cause the softening, or does the softening ever precede and induce the hæmorrhage? In three cases related, hæmorrhage took place suddenly, producing hemiplegia, and death within a few hours; surrounding the coagulum the cerebral structure was softened, but apparently only mechanically, and no exudation corpuscles were found. In two other cases, with the same symptoms, death took place respectively in seven days and five weeks. Here the surrounding cerebral structure was softened, and numerous exudation corpuscles were discovered. Thus it would appear necessary

for a certain time to elapse before the hæmorrhage can produce the inflammation. On examining the mode of accession, also, there is no reason for supposing that softening preceded the hæmorrhage. In seven out of eight cases the attack was sudden, and in the eighth, where headache had existed for some time, this was evidently congestive, and the softening contained no exudation corpuscles or granules.

With regard to the character of the softening that frequently surrounds apopleptic clots or sanguineous infiltration, Durand-Fardel asserts, that if the softening extend beyond the limits of the infiltration, if redness surround it, and if enough blood be not infiltrated to have mechanically produced a diminution of consistence, then the affection is inflammatory. If, on the other hand, the softening is slight, its extent limited, if there be an adhesion of the meninges, and if the surrounding parts appear healthy, then the affection is simply sanguineous infiltration. With these distinctions, however, our author is not disposed to agree; two cases are brought forward, in one of which the appearances first mentioned were presented, whilst the second resembled what is described as simple infiltration. In neither case could any corpuscles or granules be discovered.

At this point Dr. Bennett pauses, promising, however, to renew the inquiry at some future period. The subject is one of the highest interest, and the observations of the author are deserving of the utmost attention.—*Med. Chir. Rev.* from *Edin. Med. and Surg. Journ.*, Oct. 1843.

24. *Inoculation of Vetraria in Neuralgia*.—M. LAFARGUE has, in many cases of Prosopalgia, had recourse to this endermic mode of treatment with singularly good effects. The plan he follows is nearly the same as that used for vaccination: a number of punctures are made with the point of a lancet that has been charged with a saturated solution of the alkaloid. Each puncture becomes at once the seat of a sharp pain, which is usually compared by the patient to a continual deep pricking with the point of a needle. This unpleasant sensation lasts from five to fifteen minutes, and then gradually subsides; and with it, the red areola that has formed around the punctured spot. M. Lafargue recommends, in severe cases, that the inoculation be repeated morning and evening; and that as many as ten or twelve punctures should be at a time. He has used the same method of treatment with decided good effects, in several cases of partial paralysis.—*Ibid.*

25. *Nux Vomica in Neuralgia*.—M. ROCLANTS, a Dutch physician, reports most favourably of the effects of this potent drug in severe cases of neuralgia of the face and other parts, and communicates at the same time the therapeutic results obtained by many of his professional friends. Out of the twenty-nine severe cases, a perfect cure was effected in twenty-five, and decided relief was afforded in the other four. The dose, in which the powdered nux vomica was administered, was from three to ten grains, and upwards, in the course of the twenty-four hours. In all cases its effects should be narrowly watched, as unpleasant consequences have occasionally resulted from incaution on the part of the physician. M. Roclants is inclined to regard the nux vomica as, on the whole, the most efficient and certain remedy against severe neuralgia; he has seen several cases, which had resisted the long administration of steel, bark, and all the other most approved means, yield to its use.

M. Trousseau has recently been very strongly recommending the strychnos as a most valuable remedy in obstinate chorea.—*Ibid.*

26. *Belladonna in Dysmenorrhœa*.—Dr. G. BIRD has found belladonna, properly prepared, of the greatest efficacy in that form of dysmenorrhœa which was unaccompanied by organic change, or attended by the discharge of shreds from the uterus, and in which the pain was referred to the lower part of the abdomen, immediately over the uterus. When the patient was of a leuco-phlegmatic habit, pale and chlorotic in appearance, he ordered five grains of extract of bel-

ladonna and twenty grains of sulphate of zinc, to be divided into twenty pills, and of these one was ordered to be given immediately on the accession of pain, and repeated every two or three hours, until the pain ceased. When the patient was plethoric and of full habit, he substituted ten grains of ipecacuanha for the zinc, and the pills were given in the same manner. In the intervals of menstruation, purgatives were administered, with medicines tending to improve the general health. This treatment he had scarcely ever known fail.—*Lancet*, March 23, 1844.

27. *Nitrate of Potass in Spasmodic Asthma*.—Dr. FRIST has tried this remedy in the manner advised in our No. for Jan. 1842, p. 262, in a case of spasmodic asthma, which had obstinately resisted all other treatment. The relief was instantaneous, and the remedy never failed to cut short the attack as often as it was repeated.—*Il Filiatre Sebizio*.

28. *Continued Inflammatory Affections modified by Marsh Miasmata*.—During the course of a discussion on the use of the sulphate of quinine in intermittent fevers, at the Medical Society of Gand, an interesting communication was made by M. GUISLAIN, on the influence of marsh miasmata in the production of certain acute continued forms of disease, which necessitate the use of sulphate of quinine. The views of M. G. accord with those advocated by Dr. Boling, in an interesting article in the original department of this Number.

We subjoin a brief analysis of the former memoir.

"For more than fifteen years I have observed, every now and then, inflammatory diseases, which I have treated with miraculous efficacy by the sulphate of quinine; they have been specific inflammations, and not larvaceous or pernicious fevers, such as have been generally described. The inflammatory affections of internal organs which I have oftenest been obliged to treat by the sulphate of quinine, are more especially groups of cerebral symptoms, which it would be difficult to particularize by a special name. They who are satisfied with the usual denominations would call them cases of meningitis, arachnoiditis, encephalitis—cerebral fevers. These terms, however, never satisfied me; I always found more than the ordinary symptoms of these diseases in the cases to which I allude. They presented the phenomena which is generally termed ataxic, and which manifests itself by something sudden and alarming in the progression of the disease. Moreover, although the symptoms of deep lesion of the cerebral functions were present, there was absence, as in adynamic fevers, of the true symptoms indicating inflammation of the meninges or of the cerebral substance, viz., the muscular contractions, followed by local or general paralysis. In every case which I have seen there was great pain felt in the region of the forehead, of the temples, of the crown of the head, and, less frequently, of the occiput. This cephalagia sometimes assumed the character of a rheumatic pain, passing from one region to another. The fever was continued, intense, and the general depression consequently great. Delirium appeared in some instances before the patient was obliged to take to his bed.

"In cases of this kind I have given the sulphate of quinine with great and nearly instantaneous success, the cephalagia at once disappearing, then the delirium; the cardiac pulsations becoming slower, the fever vanishing, and convalescence taking place in the course of a few days.

"I will now endeavour to enumerate the principal points by which I am guided in thus resorting to the use of quinine.

"I take into consideration the locality in which the patient is living, its proximity to water, or to a marshy district; the time of the year (summer heat being favourable to the development of the diseases caused by marsh miasmata), and the medical constitution of the period. I recollect that in the form of disease of which I am speaking, the manifestation of the morbid phenomena is generally instantaneous; that from the first there is great adynamia, to which delirium soon succeeds. I must add that there is never any remission in the febrile symptoms, and that the urine is not red, as in inflammatory diseases, but

pale, rather troubled, and deposits a mucous sediment, like the urine of patients to whom the sulphate of quinine has been administered in intermittent fevers. In these cases the skin often presents the same deadened earthly coloration which is observed in those who have long resided in marshy districts. This form of disease is not confined to cerebral affections; it may be observed in the thoracic and abdominal inflammations. In such cases antiphlogistic remedies constantly fail to ameliorate the state of the patient; indeed, bleeding I have often seen to aggravate the cephalagia and all the other symptoms. This being the case, the want of success of the first antiphlogistic remedies resorted to may often be a valuable indication of the true nature of the disease."—*Bulletin de la Soc. Med. de Gand.*

29. *Alcoholic Lotion in Phthisis Pulmonalis.*—Dr. MARSHALL HALL extols the efficacy of an alcoholic lotion constantly applied by means of six folds of linen over and across the upper lobes of the lungs, in checking the deposition and softening of tubercles in the lungs.

"One part of pure alcohol is mixed with three parts of water. It is applied tepid at first, afterwards of the temperature of the atmosphere. It is applied, in small quantity at a time, every five minutes, so that the application may always consist of alcohol and water. (If applied in larger quantity and less frequently, the alcohol would evaporate, and water alone would be left, and this would be the source of a feeling of discomfort instead of the feeling of glow which the alcohol induces.) The application is easily made; a piece of soft linen, of the size of a very large sheet of letter-paper, being folded in the usual manner, is then folded twice more, in lines parallel with the first, so that the whole consists of six folds. These are stretched, applied across the upper part of the thorax just below the clavicles, and fastened to the shoulder-straps, or other part of the dress, which latter is to be arranged so as to be readily opened and closed. A sponge, the size of a walnut, is then filled with the lotion, and pressed upon the linen along its whole course, the dress being opened for this purpose and immediately closed.

"This operation need not occupy five seconds. It should be repeated, as I have stated, every five minutes. The application of the lotion should be incessant during the day and all waking hours, the dress being light, or even entirely removed, so as to allow of free and rapid evaporation. It is suspended during the night.

"It is by no means my wish to laud this remedy beyond its just value; but I have no hesitation in asserting that it possesses a power in checking the progress of the deposition and softening of tubercle in the lungs, beyond any other which I have ever tried. And the number of patients who have recovered from incipient phthisis under its use, and who, after many years, are still living, and in apparent health, induces me to express myself in strong terms in regard to its extreme value.

"One patient, who consulted me fifteen years ago, had dulness on percussion, and pectoriloquy, and every other sign of incipient phthisis. He applied, and long wore, the alcoholic lotion, called it his 'breast-plate,' and is now a professor of ——— College.

"A lady, about thirty years of age, became affected with hæmoptysis, and displayed the physical signs and the usual symptoms of phthisis. She was enjoined the alcoholic lotion. It is fourteen years since it was first applied, and it is continued, or renewed, if ever suspended, to this day.

"I saw a young lady two years ago, one of a most consumptive family, affected with hæmoptysis, and with every threatening sign and symptom of incipient phthisis. I prescribed the alcoholic lotion, and the cough and hæmoptysis were removed, and every fear dispelled. It had already been proposed that this young lady should take a voyage to Madeira. She did so, continuing the lotion, and returned in apparent good health."—*Lancet*, April 20th, 1844.

30. *Epidemic Fever lately prevalent in Scotland.*—A variety of continued fever differing from the ordinary typhus or typhoid forms, has been prevalent in the larger towns of Scotland for eighteen months past. We have already given an excellent notice of this fever (see preceding Number, p. 450,) but as the disease will probably reach this country, indeed we suspect it has already appeared, for the Roundout fever has many points of resemblance to it, we shall give some further details respecting it.

Dr. CORMACK, in an interesting volume on this fever, which he had an opportunity of studying at Edinburgh, describes two forms of the disease, first, the moderately, and secondly, the highly congestive, the symptoms of which he gives as follow:

“*Ordinary, or Moderately Congestive Form of the Disease.*—In ordinary cases, the countenance of the patient has a peculiar appearance, which we may designate *bronzed*, for want of a better term. Though no words can accurately convey what is thus attempted to be described, the appearance itself is very characteristic, and has never failed to arrest and interest the medical visitors to the hospital, to whom it has been pointed out.

“The symptoms of invasion are in all cases remarkably similar, both as to their nature, and order of occurrence.

“The patient is first seized with coldness, rigors, headache, pain in the back, and more or less prostration of strength; but the latter symptom, it must be remarked, is often not at all urgent, many walking long distances from the country to the hospital, especially during the first days of the disease; and a still greater number of the destitute town patients lounge about the streets after their seizure, and come into us on their legs.

“After a period, varying from less than half an hour to several hours, the cold fit terminates, when the severity of the headache greatly increases, and a dry burning heat comes over the whole body, accompanied by much thirst and general uneasiness.

“The hot stage is succeeded by a sweat, usually very profuse, continuing for a number of hours, and seldom attended or followed by any relief to the headache or other pains.

“Sometimes, though rarely, there is no sweating for two or three days after the seizure. Occasionally, also, there is no well-marked hot stage between the cold and the sweating fits; and in at least a few cases, the sweat breaks out on the face and upper part of the body, whilst the patient is yet in his initiatory rigors.

“It is proper to remark, that during the whole course of the disorder, the perspiration has a characteristic disagreeable smell, and is decidedly acid, as is proved by its reddening litmus paper, and that sometimes with intensity.

“During the three stages of the initiatory paroxysm, the pulse is rapid, being sometimes as high as 150, seldom below 90, and commonly ranging between 90 and 120. During the rigors, in several cases, I have found it very wiry and tremulous; in the hot stage it is often hard, and not very easily compressed; at the sweating period, it becomes fuller and softer, and does not exhibit that deficiency in strength, shown after, and during the perspirations of a more advanced period of the fever.

“For the first forty-eight hours, the tongue commonly continues moist, exhibiting at the same time a white or brownish yellow fur, excepting at the point, where there is usually a clear space, extending over a space, often (as in *typhus abdominalis*) shaped liked a triangle, the extremity of the tongue forming the base. Afterwards, the tongue becomes dry, and longitudinally streaked on the centre with brown, in which state it continues till the approach or arrival of the crisis, at from the third to the ninth, but in the majority of cases, on the fifth day.

“During the first four days, some of the patients have occasional short rigors; but most commonly, they are in a state of dry ardent fever, with occasional sweatings. These sweatings occur, or at all events, commence in most cases, between two and nine, A. M.; but to this rule, there are many exceptions. In a

considerable proportion, even of the ordinary and mild cases, nausea and vomiting usher in and attend the sufferings of the first days. Pain at the scrobiculus cordis generally accompanies these symptoms; not unfrequently, it is present without them. A symptom which uniformly occurs during the first four days, is severe muscular and articular pain. General uneasiness, or pain in the abdomen, (but particularly above the pubes, and over the liver and spleen, when pressure is made on these regions,) are very commonly, but by no means uniformly met with.

"So long as the patients suffer much from the symptoms now described, they sleep badly, and frequently not at all, unless opiates are administered. The severe pains in the joints and muscles are often sufficient to account for the bad nights complained of; but even with those who do not suffer much from this cause, sleeplessness is a distressing symptom up to the crisis.

"A remission on the third day is very common. It occurred in all the cases which I have had an opportunity of attentively observing from the invasion onwards.

"On or about the fifth day, there is an evident manifestation of the violence of the disorder being expended; and this change for the better is often very sudden and complete. One day, we hear the patient moaning and groaning in pain; and on the next, he is at ease and cheerful, his only complaints being of hunger and weakness. This state is generally ushered in by a copious sweat; or by epistaxis or diarrhœa. The sweating was by far the most common critical evacuation till the beginning of October, when diarrhœa and dysentery, formerly rare occurrences, became common; and at the present time (October 30) they are as usual as sweating. After this change, the pulse, tongue, and skin are quite natural; and the facial bronzing often becomes much less striking. For several days, or till about the fourteenth or fifteenth day of the disease, there is a period of intermission, during which a great deal of lost strength is regained, and a steady improvement goes on in all respects.

"On, or about the fourteenth or fifteenth day from the beginning of the disease, the patient relapses; or, in other words, has a paroxysm of fever, similar to that which began his first attack. The relapse takes place late or early, just according to the date of the first convalescence, as will be clearly seen from all the cases to be detailed. It sometimes happens, that the onset and progress of the second attack are attended by severer, and at other times, by milder symptoms than those of the first. In the relapse, the abortions most commonly take place. In it also, the muscular and articular pains are very often most severe. Cases, which in the first attack were strictly mild and ordinary, have in the second, become signalized by jaundice, delirium, diarrhœa, dysentery, and other grave symptoms. Such occurrences are, however, not common.

"A large number of patients have a second and generally mild relapse, on or about the 21st day. As these relapses take place often after dismissal from the hospital, it was some time before I discovered the frequency of third attacks.

"In those who are young and of good constitution, the convalescence is rapid and complete. In the old and debilitated, it is otherwise; but I have never seen any one, old or young, die of the ordinary form of the fever."—pp. 3-6.

"*Highly Congestive form of the Disease.*—Although many of the cases issuing in death, or characterized by extreme severity, present symptoms very different from those hitherto detailed, there can be no doubt, that the disease is essentially the same, the difference being one only of degree, as will be more specially unfolded hereafter. Both forms are undoubtedly the result of the same morbid poison.

"One of the most common symptoms in the highly congestive form of the disease, is yellowness of the conjunctivæ, and of the whole surface of the body. It generally appears between the third and seventh day, and is always most intense on the face, neck, chest, abdomen, and thighs. The hue of the neck and chest is the most vivid; then comes, of equal, or nearly equal brightness, the abdomen; then, somewhat fainter, the thighs; then, considerably paler still, the legs, arms, and fore-arms; the hands and feet get their colour later, always

to a much less extent, and sometimes not at all. The yellowness occasionally appears during the relapse, and not in the first attack. I have seen it present in both.

"Associated with the yellowness, there are generally depression, less or more delirium, dusky, and often porter-coloured urine, black melæna-like stools, and hæmorrhages from some of the mucous membranes. In the worst of the cases, black coffee-ground like matter is ejected from the stomach, and passed per anum.

"In some cases, the black vomit occurs without the yellowness; and, on the other hand, at the autopsy of yellow patients who have had no black vomit, this matter has been found in the stomach, and other parts of the alimentary canal.

"Enlarged liver and spleen, and tender and tympanitic abdomen are less constant, but still very usual symptoms in cases characterized by yellowness or extreme congestion. Difficult micturition has been complained of by several of my yellow and purple patients.

"A deep persistent purple colour of the face, appearing before, or immediately after the invasion of the disease, is a certain prognostic of danger, and is seldom absent in those destined to be yellow. Since I first made this observation, it has received, among others, two notable verifications in the cases of my assistant, Dr. Heude, and Mary Wallace, one of the nurses. Dr. Heude I pointed out to my other assistant, Mr. Reid, as deeply purple at noon, when we were engaged with the visit:—at 3 P. M. he was in the initial paroxysm of the fever. Mr. Reid and I remarked Mary Wallace becoming first bronzed, and at last purple, before she was laid up, and in consequence advised her to take the chlorinated solution, which she did not do. Both became yellow, and both narrowly escaped with their lives.

"With the exception of the purple countenance, the symptoms which usher in the congestive form of the disease, differ little from those attending the disorder in its milder degree. As has already been remarked, there is some considerable difference in the cases as to the time at which the yellowness appears.

"Generally, in the severe cases, there is merely a remission about the seventh day, but no intermission; and even in those who died a few days later, a slight amendment was noticed about the usually critical period."—pp. 23, 24.

"*Pathology of the disease.*—The present epidemic possesses positive and negative characters, strikingly distinguishing it from the fever which generally prevails in Edinburgh, viz.—

"1. *The sudden and violent invasion of the disease.*—2. *Bronzing, leadening, or purpling of the countenance before and after seizure.*—3. *The almost uniform occurrence of one or more relapses.*—4. *The unusual number of cases with yellow skin, black vomit, and hæmorrhage.*—5. *The short duration of the pyrexial state, and its mode of termination.*—6. *The severe muscular and articular pain.*—7. *The rosy, elliptical eruption resembling measles is absent in almost every case in the present epidemic.*

"Whilst these are the principal characters which distinguish the two epidemics, they also exhibit other marked differences; for instance, in that which now prevails.

"8. *Severe vomiting is much more common; as are likewise gastric, gastro-hepatic, gastro-splenic, and gastro-enteric symptoms.*"—p. 84.

Dr. Cormack fully illustrates these eight distinctive characters. We have only room to quote what is said under the two last heads.

"*The rosy elliptical eruption resembling measles is absent in almost every case in the present epidemic.*—Certainly, one of the most remarkable distinctions between the symptoms of the epidemic which now prevails, and that which has been common in Edinburgh for a number of years past, is the absence, with some rare exceptions, of the rosy, elliptical, and elevated spots resembling measles, which disappear on pressure, and return when the pressure is removed.

"While the almost universal absence of the typhoid eruption presents an obvious difference between the phenomena of the ordinary and present epide-

mics, yet its occasional presence suggests to us the important inquiry, whether the two fevers, though apparently so different, are not the results of modifications of the same morbid poison?

"On this subject Dr. Alison remarks: 'It is a curious and interesting question, whether this kind of fever has proceeded from the same poison as the usual typhoid fever of Edinburgh, or is truly a separate disease? It is quite certain, that the one has succeeded the other, within narrow limits, both of time and space, in different parts of the town; and I have seen two instances, in which strictly typhoid cases, with the characteristic eruption, have been brought in from the same rooms, in which a succession of the milder cases have occurred at the same time. But, on the other hand, I am aware of several cases, carefully investigated by my friend and colleague, Dr. Henderson, in which a succession of protracted typhoid cases has been traced to one room, while all the cases in the neighbourhood have been of the mild and short fever. And one man under my care, after passing through a protracted typhus, with the characteristic eruption, and threatening of ulceration of the bowels, relapsed, with the symptoms of the usual epidemic, of which cases were lying beside him, and had the usual crisis, and second relapse,—so that he might be said to have gone through both diseases in their present form, before leaving the ward.'

"We find the ordinary eruptive typhus driven from the field;—the present form of fever gradually springing up as the other decreased. I am aware, that it has been alleged, in conversation, by some physicians, that the few cases which have presented the rose-red fever eruption did not relapse,—were of the continued type,—and, in fact, were cases of a different disease. To this opinion, I was also at first strongly inclined, more especially, as it was currently alleged, that these cases could be traced to *foci* of contagion, where the same form of the disease prevailed. This opinion, however, is not tenable. It may be true that the cases of what are termed 'true typhus,' come pretty generally from the same houses; but then, do they not come also from the same families? May it not be a peculiarity of constitution in these individuals, which determines this particular manifestation of the morbid poison? Though the constitution of an epidemic gives to it a character, yet idiosyncrasy causes families and individuals to be affected differently from the generality of persons. Who will maintain that the scarlatina poison does not produce mild cases, without sore throat and eruption, as well as those with one or both of these characters?

"Now, no person who saw the rosy spots in the case of Mary Wallace, *on their first eruption*, could say, that it was not the true measly typhus eruption; and yet, the bronzing, purpling, and jaundice, along with the urgent vomiting, rheumatic pains, and the relapse at the usual period, proclaimed unequivocally, that she was afflicted with the prevailing epidemic; or rather, perhaps, a sort of bastard between the two forms of fever. She took the fever in the hospital, where, at the time of her seizure, there was not a single case that either had, or had had typhus eruption. Facts are wanting to enable us to speculate with advantage upon the question, as to whether all of those occasional cases with eruption proceed from the same poison as those without it; but this, at all events, can be stated, that *there is such a thing as persons being occasionally affected with the measly eruption, in addition to the usual symptoms of the present fever*; such persons, moreover, apparently getting the disease from a contagious poison evolved from, or generated by persons congregated together, affected only with the prevailing form of the fever.

"When I commenced the observation and study of the present fever, and indeed, for a considerable time afterward, I regarded it as *essentially and totally* different from typhus; but recent circumstances, and more matured weighing of evidence, have greatly modified this opinion. In the case of Mary Wallace, a bastard fever was distinctly recognized; and as the season advanced, all the cases have been more characterized by depression and general typhoid symptoms. The cases of continued fever, with and without measly eruption, are becoming more common in Edinburgh, and also in Glasgow, as Dr. Wier of the Hospital there informs me.

"If some think, that on this point there has been exhibited an undue reluctance to enter fully upon an important pathological inquiry, I beg to remind them that data are yet wanting to entitle us to discuss it fairly, and with profit. This may be attempted in a subsequent publication, at the close of the epidemic; in the mean time let the remark of Rousseau be remembered, that 'the truth is in the facts, and not in the mind which observes them;' and it is hoped, that some important facts have been even here communicated as contributions to this part of the pathology of the fever.

"*Severe vomiting is much more common, as are likewise gastric, gastro-hépatic, gastro-splenic, and gastro-enteric symptoms.*—Even in the mild cases, more or less pain of the epigastrium and vomiting are general symptoms. They have been urgent in the majority of those whom I have treated, both in the New Fever Hospital, and subsequently in the Infirmary. They have not always gone together; and even in some fatal cases, in which the black vomit occurred, there was no pain or tenderness of the epigastrium.

"In the mild cases, the matters vomited are generally the ingesta tinged with green, of various degrees of intensity. If the patient drinks incessantly, which is usual, the deepness of the green is less intense, from the immense quantity of fluid which is constantly being taken into, and at once ejected from the stomach, diluting the colouring matter; for it is very common for every thing, as soon as swallowed, to be discharged.

"In the most malignant of the yellow cases, there is sometimes a fine inky sediment in the vomit; at other times the grounds are grumous,—in consistence, like the thick part of hare soup, and varying in colour from dark-brown to black. In a fatal case which occurred to me the other day, there was a thick matter at the bottom of the vessel, resembling the dark-green mud which collects in pools of stagnant water. Upon repeatedly washing this sediment with water, the green colour was almost removed, and what remained was like the grounds of hare-soup.

"The grumous matter of the black vomit, in its various forms, is unquestionably blood extravasated from the capillaries of the stomach, and chemically altered by the action of the acids of the stomach upon it. That the black vomit is altered blood, has been again and again demonstrated at our autopsies, by tracing it to the sources of its extravasation, and finding large clots of blood in the submucous cellular tissue of other parts of the intestines in the same cases. The black colour is probably produced by chemical action between the acids of the stomach, and the iron of the blood."—pp. 103-8.

"What is said by Blane of the affection of the stomach and vomiting in the yellow fever of tropical climates, applies to our present yellow cases. 'In all stages,' says he, 'of this disease, it is the affection of the stomach that affords the most distinguishing and important symptoms. As it advances, an unconquerable irritability of this organ comes on. Whatever is swallowed, whether solid or fluid, of whatever quantity or quality, is immediately rejected by vomiting. An almost incessant retching takes place, even without any extraneous irritation, which commonly on the third day ends in what is called the *black vomit*, the most hopeless of all the symptoms attending it.'

"The acute pain which many patients complain of, when pressure is made over the stomach and duodenum, seems, in the majority of cases, to depend on flatulence alone. At all events, when accompanied by gaseous distension, which it generally is, I have found far more advantage derived from turpentine enema, carminatives, and fomentations, than from leeches.

"*Fulness of the liver* has been noticed during life, in several cases; but not so frequently as the same affection of the spleen.

"*Congestion of the spleen* has occurred in a considerable number of cases. From the great enlargement of the organ, and the pain which the slightest pressure over it excited, I at first treated the affection as acute splenitis, but more careful consideration has now induced me to regard it simply as a congestive affection; especially from the enlarged spleens which I have had an opportunity of examining after the death of the patients, presenting congestion only. The

enormous congestion of this organ has as little to do with inflammation, as any of the other congestions met with in the fever."—pp. 108-9.

"*Gastro-enteritic symptoms* are, in general, obviously referable to the congested and irritated state of the mucous membrane of the stomach and bowels. There seems good reason, also, to believe, that in many cases they are aggravated by loose clots of effused blood, and the vitiated secretions themselves, which, acting as foreign bodies, tend still farther to increase the irritation. This accounts, probably, for the protracted diarrhœa in some severe cases which recovered. Much of the pain, however, which is complained of in the bowels arises from gaseous distension: we see it occurring, in some of the mildest cases, to a great extent.

"A few other of the most important points in the pathology of the disease must be noticed. Those to which it is proposed to advert, are,

"1st, The state of the blood.

"2d, The origin and mode of propagation.

"3d, The structural lesions caused by the fever.

"1. *The state of the blood.*—There seems good reason to believe, that a number of individuals, who do not actually succumb under the influence of the epidemic, are nevertheless affected by it in a marked and characteristic manner, such as by slight chills and sweatings, some headache and vomiting, with prostration of strength. . . .

"That the blood really is in a dissolved state, was made perfectly manifest to us, *first*, by the imperfect coagulation which it underwent when drawn from the veins of patients, a homogeneous spongy mass being formed, in place of a firm fibrinous clot, with a supernatant serosity; *second*, by the ecchymosis which was uniformly observed to surround flea-bites or other slight injuries of the skin; *third*, the frequent occurrence of purpurous spots; *fourth*, the hæmorrhages; and *fifth*, the discoveries made by the microscope.

"Professor Allen Thomson had the goodness to lend me his able assistance, in examining the blood of a number of my patients, by means of the microscope. A few drops were taken from the thumbs on the same day (24th Oct.), of about a dozen persons, some of them in the pyrexial, and others in the apyrexial stage of the disorder; and it was found, that in all of them there were an unusual number of pus globules; and in some cases, in addition to this, all the globules were found serrated and notched.

"2. *The origin and mode of propagation.*—The disease is contagious. Of this we have sufficient evidence in the fact, that almost all the clerks, and others exposed to the contagion, have been seized. Dr. Heude, and his successor Mr. Reid, in the New Fever hospital; Dr. Bennett, my successor there; Mr. Cameron, and his successor Mr. Balfour in the adjoining Fever House; as well as most of the resident and clinical clerks in the Royal Infirmary, have gone through severe attacks during the past summer and autumn. Hardly any of the nurses, laundry-women, or others coming in contact either with the patients or their clothes, have escaped; at one time there were eighteen nurses off duty from the fever; and of those who have recently been engaged for the first time, or of those who have hitherto escaped, one and another is from time to time being laid up.

"It may be fairly objected, that while these illustrations incontestably prove that the disease is contagious, they do not give a fair view of the degree in which it is so, inasmuch as all the individuals specified were not only much exposed to the poison, but were also, from the laborious nature of their respective duties, peculiarly predisposed to succumb under its influence. It is admitted, that fatigue is a predisposing cause; and also, that the contagion is rendered infinitely more dangerous by the *consortus ægrolorum*, even in well-ventilated fever wards, than it is in other circumstances.

"Long-continued exposure to the poison seems also to operate most evidently against the chance of escape, as we find that comparatively few of the Dispensary medical officers and pupils—a very numerous class—have taken the disease. These gentlemen are much exposed to the fever, and undergo a great

amount of fatigue; but they are generally with their patients only for short periods, and have constant opportunities of inhaling an uncontaminated atmosphere.

"I have seen and heard of a considerable number of isolated cases, of various degrees of severity, in the best districts of the New Town, but have never yet known of an instance of the disease propagating itself in these localities. The same observation has been made by several medical friends, at whom I have made inquiries on this subject. That at a more advanced period of the epidemic, it may gain a footing in the New Town, would not be at all remarkable, considering the unrestricted intercourse between the poor of the infected, and the wealthy of the uninfected districts. Besides, the midnight labours of the gay season will soon be in operation as a predisposing cause.

"Those London physicians who have had the best opportunities of observing typhus fever, believe, that the poison in which it originates, does not extend for more than three or four feet from the patient; or, at all events, that at a greater distance, it becomes so diluted by the atmosphere, as to be innocuous.

"It appears, that the contagion of the fever at present prevailing is subject to a similar law.

"From the number of laundry-women that have been attacked, it appears, that the clothes of our fever patients are especial repositories and communicators of the morbid poison. An interesting fact, which may be introduced here, as it is probably to be explained by what has just been stated, was communicated to me by Mr. Nicholson, from the island of Skye, one of my pupils. He informed me, that two reapers, who had had the fever in Edinburgh, arrived in his neighbourhood after their return home at the close of the harvest, when not a single case of the fever had been seen in the district. The mother of these persons, with whom they lived from the time of their arrival, was, in a few days, seized with the disease, and died. Other severe, and, in several instances, fatal cases occurred among the neighbours, who had waited upon her; and the disease is now spreading to such an extent over the whole territory as greatly to alarm the inhabitants. The people consider it a new pestilence among them, and are so dismayed at its appearance, and so afraid of its contagion, that they are ceasing to attend at church on Sunday. It is not, of course, to be supposed that all of the Skye cases have originated in the arrival of the two individuals referred to; because shortly after they returned, many others came back from their annual visit to the south, among whom were not a few who had been patients in the fever hospitals of Edinburgh and Glasgow."

"The *post mortem* appearances were, 1. Abundance or even excess of bile, and a pervious state of the biliary ducts; and 2. More or less congestion of organs, with frequently, extravasation of blood in various situations.

"These appearances are either identical with, or analogous to, what the majority of observers have noticed and described, as being those which are found in persons dying of yellow fever."

"*Sequelæ.*—These were, 1. A peculiar form of ophthalmitis,* usually preceded by amaurotic symptoms. 2. Glandular swellings. 3. Boils and cutaneous eruptions. 4. Effusion into the knee-joint. 5. Swelled legs and ankles. 6. Pain in the feet, with and without swelling. 7. Paralysis of the deltoid, and certain other muscles. 8. Sloughing of parts."

Treatment.—Dr. CRAIGIE, in an interesting paper on this disease, in the *Edinburgh Med. & Surg. Journ.*, (Oct. 1843), says, "As to treatment in general, after the use of one or two doses of cathartic medicine, the patients were left very much to the efforts of nature. At first, when the increase in numbers showed the approach of an epidemic distemper, after the exhibition of cathartics, I prescribed the use of the citrate of ammonia or saline julep with one grain of tartrate of antimony in twelve ounces of the mixture; and under this combination the tongue became clean, the skin moist, and the pulse less frequent in the course of three or four days. I found, however, that so great was the tendency

* See preceding Number of this Journal, p. 480.

to diaphoresis, that it was of little moment what was given, providing urgent symptoms and uneasy sensations were alleviated. Thus pure water or toast-water appeared as efficacious in promoting diaphoresis and procuring sleep as any other means. The patients, however, often spontaneously requested cream of tartar water; and this, with a small proportion of carbonate of soda, to facilitate the solution of the bitartrate, they got. In a very few cases was it requisite to apply leeches to the temples on account of the intensity of the headache. In general, when the hair was removed and cold applied, the pain rapidly subsided. When, after this, it did not, an active dose of cathartic medicine was administered.

"At the crisis of the disease, when the sweatings were considerable, the weakness great, and rheumatic pains were excruciating, the best remedy I found to be the sulphate of quinine in two grain pills administered three, four, or five times daily. In some cases the debility was so considerable that it was necessary to order small quantities of wine for a day or two, till the appearances of returning strength were manifest.

"For the cases in which yellowness took place, it was difficult to say what treatment was best adapted. Those in whom it occurred were persons of deranged health, in general aged, always debilitated. In the most marked and severe case which recovered, that of Ann Campbell, the treatment consisted in the repeated administration of turpentine enemata, calomel and rhubarb by the stomach, the application of one large blister on the coronal and vertical region, and then of another on the occipito-cervical, and afterwards of castor-oil when the power of deglutition was restored. Wine was also allowed this patient at the rate of four ounces daily. Under this method of management the yellowness slowly and gradually but completely disappeared, sensibility and consciousness returned, and convalescence was eventually established.

"In other cases, in which the yellowness, though general, was less deep in shade, and the nervous system was less strongly poisoned, calomel in doses of six grains, with one grain of aloes, once or twice daily, followed next morning by a dose of castor oil, was found sufficient to remove the symptoms.

"Another remedy was tried by my assistant, Dr. Wood. This was the chloride of soda, in doses of twenty drops of the solution every second or third hour. Under its use the patients appeared to get rid of their symptoms in the course of two or three days, very much as by other means."

SURGICAL PATHOLOGY AND THERAPEUTICS AND OPERATIVE SURGERY.

30. *Trousseau on the Prognosis of Tracheotomy in Croup.* 1st. If the commencement of the disease dates several days back, if, consequently, the croup has advanced slowly, whatever may be the extent of the false membranes in the trachea and in the bronchi, the children either recover, or live at least several days.

2d. But if the disease has been very rapid, even although, at the time of the operation, we ascertain that the false membranes do not extend beyond the larynx, the children die very quickly.

3d. If, before the operation, the false membranes have been extended to the nose, if they cover the blistered surfaces; if the child is pale, somewhat bloated without having taken mercury or been bled, or if he has lost much blood, the operation has little chance of success.

4th. If, before the operation, the pulse is moderately frequent, and if, after it, the pulse remains calm, hopes may be entertained.

5th. If, immediately after the operation, the respiration becomes very frequent, the child either not coughing at all, or but very little, it is a bad sign.

6th. More boys than girls are cured.

7th. Children under two and over six years of age rarely recover.

8th. *Cæteris paribus*, the danger is the greater, the more deeply the false membranes have extended.

9th. If the child is subject to chronic catarrhs, and if he had been suffering from a cold for some time when he was attacked with croup, tracheotomy succeeds better.

10th. Even when all is going on favourably, great frequency of the respiration is a bad sign.

11th. The more rapid and energetic the inflammation is, which attacks the wounds, the better are the chances of cure: the sudden sinking of the wound is a mortal sign.

12th. There is never any thing to fear, as long as the respiration is silent or the noise is only occasioned by the displacement of mucosity; but if the respiration becomes *saw-like* (*serratique*), that is to say, is attended with a sound resembling that of a saw cutting stone, death is certain.

13th. If a pneumonic or pleuritic attack supervenes, it is no reason to despair of the patient.

14th. Agitation and sleeplessness are bad signs

15th. If the wound becomes covered with false membranes, if, after withdrawing the canula, it remains gaping for a long time; if, after having entirely cicatrized, it reopens largely, the child is in danger.

16th. The sooner the larynx is disembarassed after the operation, the sooner may we remove the canula, the more certain and rapid is the cure.

17th. If the croup supervened upon rubeola, scarlatina, variola or pertussis, although there is not ordinarily any connection between the malignant angina (?) and these different pyrexias, tracheotomy does not succeed.

18th. If, the third day after the tracheotomy, the expectoration becomes mucous and catarrhal, the children recover. If there is none, or it is serous, or like little half-dried pieces of gum-arabic, they die.

19th. If the patients react vigorously against the injections of water or of the nitrate of silver, and against the spongings-out, we should not despair, however fatal the other signs may be.

20th. Children attacked with convulsions die, and the convulsions supervene oftener as the patients are younger, and as they have lost more blood before or during the operation.

21st. When, after the tenth day, the drinks pass almost entirely from the pharynx into the larynx and trachea, even if they are easily rejected, the children most generally die.

22d. The increase of the fever after the fourth day, agitation, sinking of the wound, and dryness of the trachea, frequency of the respiratory movements and attempts to cough, announce the invasion of pneumonia, which, at first lobular, becomes sometimes pseudo-lobar, and should be treated by the same means usually employed against the pneumonia of children: we should exclude, however, blisters from the treatment, because they too often become covered with false membranes.—*Mém. Sur. la Tracheotomie, vide Rilliet and Barthez, Traité des Mal. des Enfants, t. i. 365-7.*

31. *Tenotomy—its abuse, and the results.* M. MALGAIGNE addressed to the French Academy of Sciences, Feb. 19, last, the following communication on the abuse and danger of tenotomy in certain deformities. It presents a picture of what has been boastingly called the operative surgery of the day, little creditable, we will not say to surgical science, but to the operators of the present day, and which, if we may judge from what has been enacted in this country, in no respect exaggerated.

“The Royal Academy of Sciences was informed some years since of the alleged primary results of certain operations, marvellous in their nature, their innocence, and in the ultimate consequences which there was reason to hope they would lead to, or which it was said they had in some cases actually

led to. Thus, on January 20, 1840, there was communicated to the Academy the history of a girl, aged fourteen, in whom *fifteen* different tendons were divided at one sitting; and a few months later, this hardy proceeding was quite outdone by another of the same kind, performed on a man, aged twenty-two, in whom *forty-two* muscles and tendons were divided, so to say, at once. In the first patient the object in view was to correct two incomplete luxations of the knees; and the day after the operation, this, it was said, was so completely effected, "that the only remains of the two deformities was a certain amount of permanent flexion of the joints." The nature of the deformity in the second case was not stated, and the result remained to be seen; it was promised that whatever it was it should be communicated to the Academy at a fitting time.

"Nearly four years, however, have now passed by, and that fitting time has not yet come, and I certainly should not have reminded the Academy of those unfinished cases, were it not that an attempt has been recently made to give currency and credit to a surgical doctrine which seems to me fraught with most dangerous consequences, and respecting which the two facts above alluded to, together with some others, may tend to edify and instruct practitioners. The question is, whether it is allowable to divide tendons and muscles in deformities produced or kept up by paralysis, and without examining that question thoroughly, I shall just state the results the practice has already led to.

"The girl, aged fourteen, who had *fifteen* tendinous sections first performed on her, and was subsequently subjected to *five* others, was an unfortunate paralytic inmate of Salpêtrière, where she still continues. All her limbs were more or less contracted; she was affected with club-foot, luxations of the knees, flexion of the forearms and of the fingers; she presented an example of almost every variety of deformity, coupled with irremediable paralysis. The luxation of the knees was the first deformity attacked; and whether it is that the operator laboured under some illusion, or that the luxations returned after being removed, certain it is that they exist at present. The club-feet were next operated on, but they also remain at the present instant. One of the contracted hands was next dealt with; and the operations were carried no further, merely because the patient absolutely refused to submit to any more.

"What has been gained by those twenty sections of tendons and muscles? Absolutely nothing. Something, however, has been lost; for the patient experiences in both legs, at the point where tenotomy was performed, acute pain from which she did not previously suffer; before the operation on the right hand she was able to work at her needle the entire day, but now she is unable to work at all. She left the orthopedic wards of the Hôpital des Enfants, 29th June 1840, and two months after this first experiment, the second was instituted on the young man, aged twenty-two, above mentioned.

"This patient was even more impotent and paralytic than the other; all his limbs were bent, and it was proposed to straighten them all. Despite all my researches, I could not accurately ascertain how it has fared with this patient. Every one knows of the operation, but then the results have been carefully concealed from every one. I shall not allude to the various reports circulated on the subject, as I wish to confine myself to what is accurately true.

"But we have the complete history of a similar operation performed in a similar case by an honourable and conscientious surgeon. The patient was a child, aged 11, affected with paralysis and contraction of all its limbs, but at least retaining the power of inclining the trunk forwards, backwards, and to each side. M. Phillips, misled by the example set him, divided all the contracted tendons, straightened all the flexed joints, and the result was, that the unfortunate child, straight as a bar of iron, the arms glued against the trunk, lost the limited power of motion formerly possessed by the entire body, and lies on the bed like a dead body, the head alone enjoying motion—a frightful picture on which the mind is unwilling to dwell.

"Between the 1st of August, 1839, and the 1st of July, 1843, six patients affected with paralysis, more or less complete, have been admitted into the orthopedic wards of the Hôpital des Enfants. In four of the cases there seems to

have been general paralysis. One was the girl whose case has been already alluded to; a second remained in hospital six days only; the two others died in the hospital. In the two other cases the paralysis only affected the foot or the lower extremities; one I have been unable to trace; in the other the tendo-achillis was divided, but the club-foot and paralysis remain as before.

I thought it important to communicate these results to the Academy, as it was to this learned body that such contrary results were partly announced, and partly promised. It is time that a due estimate should be performed of these hazardous attempts, and I intend shortly to address another letter to the Academy on the abuse and danger of myotomy in the treatment of lateral deformities of the spine.

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32. Ununited Fracture of the Forearm successfully treated by seton. By Dr. Houston — A woman, ætat. 26, had her forearm fractured on the 17th March, 1843, by her arm being accidentally drawn in and squeezed between a wheel and a belt which she was adjusting together. The bones were both broken at the same place, and about the centre of their length.

The fracture was set by a medical gentleman at the time, and put up with splints and a bandage. These dressings were left on, without being changed, for five weeks, during which she suffered much uneasiness in the arm. At the expiration of that period, the fracture was found ununited, and the hand numb and incapable of motion.

The splints were then reapplied, but after further suffering for some weeks, and finding no advance towards union, the woman returned to Ireland.

On admission into the city of Dublin Hospital, (ten months from the date of the accident,) the fracture was quite loose, admitting of nearly as much motion as the wrist-joint. The inferior fragments lay on the back of the superior, overlapping them for about three-quarters of an inch. The hand and forearm were wasted and powerless, and sudden motion of any kind, or change in the weather, produced distressing pain. There was no tumefaction or lumpishness about the fracture, such as is usually present when callus has been secreted; on the contrary, the ends of the bones appeared rather to have undergone atrophy than enlargement. This young woman never had had any syphilitic or other serious indisposition. The great length of time during which the fracture had been ununited rendering it unlikely that the milder means of treatment, such as mercury, friction of the bones, or even the process of scarifying them by subcutaneous sections lately recommended, would effect a cure, and the operation of sawing off the ends of the bones being regarded as too severe an experiment for a first attempt, the intermediate method, that by seton, was determined on.

On the 10th of January, 1844, Dr. Houston, assisted by Professors Hargrave and Williams, introduced three setons, consisting each of ten or twelve silk threads, in the following manner. The bones being pulled a little asunder, a strong seton needle, armed with the silk, was pushed obliquely between the overlapping surfaces of the fracture in the radius, and the seton, drawn after it, left lying directly between the bones. In the same way, another seton was placed between the overlapping ends of the ulna. And, finally, in order to insure a sufficiency of inflammatory action, a third seton was introduced around the outside of the broken part of the radius, as close to the bone as possible, by means of a more curved needle than that used in the other instances. Care was taken in the introduction of these needles to avoid the line of the principal vessels and nerves; and small incisions made with a lancet through the skin at the points of their entrance and exit were found to facilitate greatly the passage of the setons through these apertures, and to save the patient from much pain. The limb was then enveloped loosely in a bandage, and laid on a splint.

The next day the forearm was swollen and painful, and the pulse 90. The patient had slept badly, and complained of headache, thirst, and heat of skin. An aperient draught and a cooling lotion were directed.

On the third day purulent matter escaped at the seton-holes. During a period of three weeks, the limb was kept steadily in splints, the dressings being re-

moved daily, to afford an opportunity for washing away the discharge, which was abundant. The setons were then withdrawn by degrees, a few threads being pulled out at each dressing, so that by the 6th of February all had been removed. The limb was now found to have acquired considerable firmness. The woman could raise and move it without the same yielding at the broken part as formerly. However, as it was very tender, no attempts were made to ascertain the exact amount of solidity which it had gained. The tumefaction was at this period limited to the immediate neighbourhood of the fractures, where there was a palpable enlargement of the bones.

On the 11th of February, at which date the seton holes had completely healed, the arm was put up, immovably, in the following manner. A dry roller was applied round the arm, from the thumb upwards, equably and with moderate tightness. A layer of starch was rubbed well on the outside of this. Then the roller was carried down again, and again smeared with starch. Two pieces of pasteboard, cut to the shape of the forearm, were now laid on, one before, the other behind, and fixed in their places by several additional layers of the roller, laid on and starched as the first had been. The pressure exerted was barely such that while the bones were steadied properly, the muscles were allowed sufficient play to permit them to move the fingers a little. This dressing, by the next day, had become as firm as a board: and the only unusual sensation the patient experienced from it was a continual glow of warmth in the limb to the extent embraced by the bandage. During the entire period that this woman was under treatment, with the exception of the first week, when there was considerable local inflammation and general febrile disturbance, she was kept on full diet, and allowed a little wine or porter every day. She had also directions to remain out of doors, as much as the weather would permit, walking in the garden of the hospital.

On the 7th of March, four weeks from the application of the fixed bandage, the arm was again unrolled, when it was ascertained that the desired union had been established, that the patient could flex and extend the arm, and perform the motions of pronation and supination with facility, and that attempts to bend the bones at the broken parts, although productive of pain, made no impression on their form. The arm was now left unbandaged, and treated simply by bathing, hand-rubbing, and passive motion; and every day it gained in strength and fulness. On the 12th of March, the starch bandage was again applied preparatory to the woman undertaking a journey home, into the country; and on the 13th she was discharged, with directions to keep the dressings on for a few weeks longer, to permit the tenderness to subside, and to give full security against the occurrence of any morbid degeneration of the callus.

On the 10th of April, Dr. Houston received a letter from Dr. Fleming, informing him that "the union was quite perfect, and that the woman was daily acquiring a better use of the muscles of the arm."

Dr. Houston said that he thought this case calculated to encourage the practice of treating such lesions by seton—or, at least, of making the attempt before proceeding to the more severe alternative of extirpating the ends of the bones—an operation which is not only tedious and painful in the extreme, but also fraught with danger to the life of the individual.—*Dublin Med. Press*, May 1, 1844.

33. *Aneurism of the External Iliac Artery—Ligature of the Common Iliac.* By RICHARD HEY, Esq., of York.—The subject of this case was a man 41 years of age, who, on the 10th of November, 1843, perceived a stiffness and uneasiness in his left groin, and on examination found a small hard tumour immediately above Poupart's ligament, midway between the anterior superior spinous process of the ilium and the tuber of the pubis. Having been occasionally subject to scrofulous tumours, ending in suppuration, he supposed this to be an enlarged gland, and therefore at first took but little notice of it; he showed it, however, to his medical attendant, who prescribed suitable remedies for its removal. On the 13th he was suddenly attacked with severe pain in the tumour, and on the

following morning it was found to be much increased in size; and now, for the first time, a decided pulsation was observed in it; pulse 90. From this time until the 23d, the tumour made perceptible advances in size daily, accompanied with pain along the course of the anterior crural nerve.

November 22. The tumour is now the size of a pretty large orange; the impulse very strong. It was, however, easily emptied by moderate and continued pressure, instantly filling again when the pressure was removed. Pressure on the aorta had the same effect, but in a lesser degree. When the base was grasped, the fingers at every pulsation were forcibly separated, and equally so on every side. There was clearly aneurism of the external iliac artery.

November 28. The tumour rapidly increasing in size, and as there seemed to be no alternative but placing a ligature upon the common iliac artery or speedy death, Mr. Hey proposed the operation, but the patient would not then consent.

November 30. The tumour now, from having a round and uniform surface, has become conical like the pointing of an abscess, the skin also thinner, red, and shining.

December 2. The tumour has so much increased within the last forty-eight hours as to render any farther delay hazardous. Mr. William Hey, of Leeds, saw the patient in consultation, and concurred in the propriety of placing a ligature on the common iliac artery. "It seemed out of the question to attempt tying the external iliac, because from the very large size and extent of the sac, it was evident that there would not be room for a ligature between that and the bifurcation of the external and internal iliacs; and in addition to this, the probable state of that artery made it unwise to run such a risk, even if it had been practicable.

"December 3. The tumour now occupied the whole of the left iliac fossa, its base projecting considerably below Poupart's ligament inferiorly, and superiorly extending to within less than an inch and a half from the navel, being six inches across from above to below, and six inches and a half from side to side; projecting also from the plane of the abdomen fully three inches.

"The patient was placed on his back on a mattress, his shoulders moderately raised. The incision was commenced two inches and three-quarters above the navel, and exactly three inches to the left of the median line. This was carried down moderately curved to the base of the tumour about six inches, and was afterwards enlarged by an angular continuation, one inch and a half in length. The fibres of the external and internal oblique muscles and transversalis being successively divided, the transversalis fascia was readily raised by means of a director, and carefully opened out through the whole length of the incision. The peritoneum now protruded in some measure; it was, however, kept down without much difficulty; and being gently drawn towards the opposite side, I was enabled slowly to insinuate my fingers behind the peritoneum, gradually separating it from its cellular attachment to the parts beneath. The common iliac artery was easily reached, and upon compressing it with the fingers, the pulsation in the tumour ceased at once. A little time was occupied in scratching through the sheath of the artery with the point of the aneurism needle; this being accomplished, the needle was passed under the artery from within outwards, armed with a double ligature of staymaker's silk, waxed. By holding aside the peritoneum and viscera, we now obtained for a moment a view of the artery, and ascertained that nothing else was included in the ligature; this being tied with the fingers close down upon the artery, all pulsation in the sac entirely ceased, and never afterwards returned in the slightest degree. The exact position of the ligature was, I believe, an inch below the bifurcation of the common iliacs. The wound was closed with six sutures and strips of adhesive plaster; and over the whole a coating of lint dipped in strong mucilage. Time, 25 minutes. The patient was now a good deal exhausted, although so little blood had been lost that it had not been necessary to take up a single bleeding vessel; he vomited also some brandy and water which had been given to him during the operation. He took, however, a cup of boiled milk, which was retained.

"Evening.—Patient had been very restless and uneasy after the operation for

some hours. A camphor draught, with 25 drops of Battley's sedative, had had the effect of composing him. There was now moderate reaction, pulse 90. The wound continued still very uneasy.

"Monday, December 4, half-past 9 A. M. Has passed a tolerable night, having had sleep at intervals without any further opiate. Pulse 95, rather irritable; bowels not moved, but distended with flatus; hiccup; no pain. Two grains and a half of calomel, and a quarter of a grain of opium, to be taken immediately, and in two hours time half an ounce of castor oil in peppermint water. Farinaceous diet.

"Half-past 7 P. M. Patient looking very ill; countenance anxious and sunken. No action of the bowels; a second dose of the oil had been rejected; hiccup increased; body very tympanitic and uneasy. The bandage round the body was slackened, with some relief. Great thirst, and difficulty in making water. Pulse 98. An enema consisting of gruel, with two scruples of gum assafoetida, immediately; small doses of liquor ammoniæ acetatis, occasionally.

"Tuesday, December 5, 10 A. M. Had intervals of light but refreshing sleep during the night. Enema had produced one good evacuation with much relief. No tenderness on pressing the abdomen; pulse 98. Patient upon the whole in a satisfactory state.

"*Vespere*. Not quite so well; rather more feverish; pulse had risen during the day to 104, now 100, and not so soft; tongue dry. No evacuation from the bowels; urine high coloured. Restless. Calomel, one grain; compound ipecacuanha powder, two grains. To be taken every three hours, with an effervescing saline draught. A common enema in the morning.

"Wednesday, December 6, half-past 9, A. M. Had passed a tranquil night; refreshing sleep. Enema had acted well; body soft and flaccid; pulse 89, soft. Dressed the wound, which showed a great disposition to heal; discharge very moderate. Omit the calomel; continue the saline draughts and farinaceous diet.

"December 7. Nothing material; all going on well; pulse 80. Bowels moved three or four times yesterday. Patient allowed some beef-tea and arrow-root, mixed. During the last day or two the tumour had looked very threatening and ready to suppurate.

"December 8. Dressed the wound, which upon the whole was going on well. Body distended; but little pain. On this day the tumour seemed to be slightly diminished in size; the skin a little paler and shrunk.

"December 9. Going on well in every respect. Hard lumps discharged from the bowels; appetite good. Ordered a mutton-chop and half an ounce of wine, in addition to arrow-root, with beef-tea.

"December 10. Wound looking well, though the edges not quite so united; discharge very moderate; bodily health and strength better than before the operation; enjoyed his chop and wine yesterday; pulse 80. Discovered this day, for the first time, an artery on the dorsum of the foot, pulsating, (the anterior tibial). Tumour decidedly diminished. From this time nothing particular occurred during the progress of the case. It was found necessary to give a small dose of morphia every night, without which he had little or no sleep. He also suffered much from violent spasm of the bowels, and tenesmus whenever they were moved, in consequence of which he had medicine only on alternate days. As the motions were abundant in quantity it did not seem very evident from what this distressing symptom arose; the spasm, however, could not be quieted without the aid of an opiate injection.

"December 23. Tumour has diminished more than one-half, but the ligature quite fast; appetite good.

"December 30. On removing the dressings this day the ligature seemed to be lying somewhat further out of the wound than usual, and on gently drawing it, I found it quite loose, and it came away without the slightest pain or difficulty. The length of the ligature from the knot to the surface was nearly five inches.

"January 4. I must now allude more particularly to the distressing feature

which has already been mentioned, and which threatened, if not overcome, to render our patient's life miserable, viz., the spasm of the bowels. Thinking that it might arise from some obstruction in the rectum, I had recommended Mr. Nelson to pass a bougie and explore the lower bowel: this he did, without, however, any result. In the mean time the spasm became more and more urgent whenever the bowels were moved. However copious the evacuation, he always felt as though there was something left which could not be expelled. On this day matters assumed a very serious aspect, the bowels were completely obstructed, the spasm dreadful; at length he became quite exhausted, and seemed to be falling into a state of coma, body very tympanitic. On passing the catheter to ascertain if the bladder were distended, Mr. Nelson found considerable obstruction. This led him again to examine the rectum, which he now found to be enormously distended with a hardened mass of fæces. It felt, he said, more like a child's head presenting than any thing else he could compare it to. It was thoroughly dry like bran. Here then was the cause of these formidable symptoms. It appears that the pressure of the increasing tumour had caused a gradual accumulation of fæces in the colon; and although considerable evacuations were obtained by means of aperient medicines and injections, yet there never was a complete clearance, owing to the growing pressure of the sac. As this however became gradually diminished by absorption, it permitted the fæcal matter slowly to advance, and at last completely to block up the rectum in the manner already described. That this was not discovered when Mr. Nelson first explored the rectum was no fault of his, but arose, I doubt not, from the circumstance that it had not descended within reach of an ordinary bougie.

"Mr. Nelson happily succeeded in breaking down this extraordinary accumulation, and our patient in a few hours so far revived as to relieve us from our gloomy anticipations. Nothing has since occurred to retard his complete recovery.

"It now only remains to notice one point, viz., the temperature of the limb after the operation. Perhaps this ought sooner to have been alluded to, but in truth there is little to say on this part of the case. We kept an accurate account, but after the first few days the temperature of the two limbs was so nearly equal that the difference did not amount to half a degree. The limb was simply wrapped in fine flannel. The temperature at first fell not quite so much as three degrees below that of the sound limb; in forty-eight hours it had risen two degrees *above* the opposite; this soon subsided, and in four days after the operation the two limbs were equal (89°) and continued so.

"Two or three weeks after I had taken my leave, Mr. Nelson informed me that the sinus, made by the ligature, was not healed. It appeared that the sac had ulcerated and discharged its remaining contents, grumous blood mixed with pus; by this means what remained of the tumour was entirely dispersed, and the sinus healed. We thought it advisable to apply a belt afterwards, in order to support the weakened parietes of the abdomen; and to the most prominent part, also, a kind of truss, with a four inch pad, which the patient found very comfortable.

"A remarkable feature in this case was the extreme and unusual rapidity of its progress, after its first commencement, only three weeks having elapsed from its first appearance of the size of a hazel nut, before it had attained the formidable size which has been described."—*Prov. Med. and Surg. Journ.*, May 1, 1844.

34. *Removal of a knife-blade from between the Trachea and right Carotid Artery.* By R. T. HUNT, Esq., of Manchester.—A man was wounded in the neck, whilst on the ground, by another who had knocked him down and fallen on him. The surgeon who first examined the wound could find no foreign body in it. Three weeks afterwards the patient applied to Mr. Hunt, at which period he was suffering from urgent dyspnœa, oppression and tightness of the chest, and fixed pain of the right side, extending through to the inferior angle

of the scapula. His face was flushed, his pulse quick and throbbing, and he could not lie down.

There was a recent cicatrix about an inch above the interclavicular space, which felt much indurated, and my impression at the time was, that the tracheal cartilages had been lacerated, and had united very unequally. Mr. Hunt bled him to 12 ounces from a large orifice, and complete syncope followed. When he recovered from the fainting, the breathing was much freer, and he felt relieved. He was treated with mercurials, hyoscyamus, and common aperients, and continued improving, but the fixed pain in the thorax did not entirely subside.

A week afterwards he called on Mr. H., and stated that something had made its appearance in the situation of the wound. Upon examination, Mr. H. found the cicatrix ulcerated, so as to expose a black angular metallic substance which was so impacted as to require careful dissection for its removal. It proved then to be a knife-blade $2\frac{6}{10}$ inches long, $\frac{7}{10}$ inches wide, and $\frac{1}{10}$ inches thick at back. When the blade was withdrawn, it apparently rested obliquely against the body of one of the cervical vertebræ, and its back was directed backwards and upwards. The bluntness of this point and of the edge of the knife will account for the carotid and other important structures so fortunately having escaped being injured.

An opiate was given, rest and an antiphlogistic regimen enjoined, and in ten days he perfectly recovered.—*Ibid.*, 24th April, 1844.

35. *Intra-capsular Fracture of the neck of the Thigh-Bone.*—Mr. WILLIAMS exhibited to the Surgical Society of Ireland, April 27, 1844, the femur of a patient aged 52, who had been admitted into the City of Dublin Hospital with intra-capsular fracture of the neck of that bone, and had lived exactly sixteen days after the accident. He had died in consequence of disease of the thoracic viscera, having been affected with unusually extensive emphysema of both lungs, general bronchitis, and several tubercular cavities towards the apex of each lung. On laying open the joint, it was observed that there was very little synovia indeed in the interior of the joint, but it would be there seen that the secretion of synovia was replaced by the secretion of organizable and organized lymph which coated the entire articular surface of the capsular ligament. This lymph was firm, adhered closely to the ligament, and was vascular throughout, though more highly organized in some situations than in others; but this lymph, and this he (Mr. Williams) thought particularly interesting, was also adherent at several points to the neck and head of the femur. Those adhesions, it was true, were not very firm, and in the manipulations necessary for inspecting the interior of the joint, they had been detached, but nevertheless, traces of their existence could still be recognized. The situation in which the capsular ligament adhered through the medium of this lymph most extensively and most firmly to the bone was at some points of the broken edge of the inferior fragment, especially anteriorly, to the extent of a quarter of an inch, and at this point the broken edge of the bone was rounded and smooth, contrasting strongly with the rough sharp edge of the bone in the situations where no such adhesions had existed. On placing the capsular ligament *in situ*, it would be observed that the situations in which the lymph that coated its inner surface was most abundant and most vascular, were precisely the points at which it adhered to the bone. The capsular ligament, independently of being thus lined with lymph, was somewhat thickened; in fact, it seemed to have acted the part that the periosteum often, perhaps, usually acts in fractures of the shafts of the long bones. With respect to the fracture itself, it was entirely intra-capsular, and ran in the direction which he thought these fractures very usually did. It commenced very near the head of the femur, and ran in a slightly curved line from above downwards, and from within outwards, until it arrived at the compact structure of the neck of the femur inferiorly, where it ran very obliquely outwards and downwards, thus leaving attached to the upper fragment in this situation a sharp wedged-shaped piece of the compact tissue of the bone which

seemed to project against and almost threaten to tear the capsular ligament of the joint at its most depending point. The reflected ligament that covers the neck of the femur was but partially torn through, indeed about one-half of it on the inferior and posterior aspect of the neck of the femur remained intact. There were no adhesions between this reflected ligament and the capsular ligament. On inspecting the broken surfaces of the bone, it would be seen that they were both highly vascular, and there really seemed to be little, if any, difference in this respect between the surface of the lower and that of the upper fragment, at least so far as could be at present determined, for he had abstained from separating them so as to examine them fully, lest he might completely destroy what he considered it very interesting to see—several shreds of lymph which passed between the opposed broken surfaces, perpendicular to and adherent to both surfaces—several of these thread-like bands of lymph had been unavoidably broken, but some of them were still distinctly seen on gently separating the edges of the fracture. This appearance showed that a thin layer of lymph had been effused between the opposed surfaces of the fracture, on separating which it was drawn out into the thin bands or threads then seen. The investing cartilage of the head of the femur showed slight recent absorption at some points, especially anteriorly, and it was at these points that the capsular ligament, as already observed, had been adherent, though very feebly, it was true, to the head of the bone. The round ligament was unusually large and very vascular. From the appearances in the joint, Mr. Williams thought that this was a case in which perfect bony union of an intracapsular fracture of the neck of the femur might very probably have ultimately taken place under more favourable circumstances; at all events, it could scarcely be doubted that, had the patient lived, most useful union would have occurred. He might say just thus much with reference to the history of the case, that the patient walked thirty or forty yards after the accident, yet the fracture was not impacted, but had the joint been examined at a remote period, when union, whether bony or not, had occurred, it would, he thought, be pronounced to have been an impacted fracture. In order to have a term of comparison, the opposite femur had been removed, and in both bones similar senile alterations had evidently commenced, the neck of the femur being shorter than natural, and on the unbroken bone (though not on the fractured one) the cartilage of incrustation was beginning to sustain senile absorption or *usure* at two distinct points. The patient, however, had not suffered from pain in either hip, or been lame prior to the accident, probably because the commencing affection of the cartilage occupied not the upper part of the head of the femur, but the anterior part, where it was subject to little pressure. The attempts at reparation in this case did not depend on any particular care having been taken in the treatment of the fracture; for the first two days splints were applied, but the embarrassment of respiration then rendered it imperative to remove the apparatus in order to allow the patient to sit up and have his position frequently changed.

The fracture had been caused by a fall directly on the most prominent point of the trochanter major.

This case disproves one of the positions on which a recent writer, M. Rodet, lays great stress. He maintains that intra-capsular fractures only occurred from violence applied in the direction of the axis of the femur, as in falls on the foot, or from what he terms antero-lateral falls, in which the anterior part of the great trochanter comes on the ground; that if the fall be postero-lateral, the fracture will be mixed, or both within and without the capsular ligament; but that direct lateral falls must produce extra-articular fractures. The direction of the violence was to be ascertained, not merely from the account of the patient, but by examining the hip, and ascertaining the exact situation of any contusion which M. Rodet deemed a certain sign of the nature of the fracture. Now, in this case the fracture had been regarded as intracapsular on the patient's admission into the hospital, and especial care had been taken to examine the hip, with reference to the views of M. Rodet, whose paper he (Mr. Williams) had shortly before read: there was little contusion, though the trowsers were torn; but still there

was a distinct abrasion of the skin over the most prominent and external part of the trochanter major; and if there was any deviation whatever from a directly lateral fall, the deviation must have been slightly posteriorly, as the man's trousers were covered with dust behind the torn part; but this probably arose from his having rolled backwards after the fall. The patient himself could not say whether he had fallen backwards or a little forwards, or exactly on his side; but the contusion which M. Rodet regarded as a diagnostic sign was there, and showed that the force was applied in a direction which he maintained must produce an extra-articular fracture, and yet dissection showed that the fracture was completely intracapsular, and thus this case clinically disproved M. Rodet's very ingenious, geometrical, and mechanical speculations, and deprived his alleged diagnostic sign of all its value. It might be said that the neck of the bone was somewhat altered in this case, and that M. Rodet admitted that such alteration might modify the results; but then in many, perhaps in most cases of fractured neck of the femur, the bone was altered, at least as much as in this instance, so that M. Rodet's sign thus again lost its value. As to there being no synovia in the joint, it was necessary to mention that circumstance, both as it was the fact, and because many eminent men mentioned inordinate secretion as the constant result of intracapsular fractures in the early stages of the accident.—*Dublin Med. Press*, May 15th, 1844.

36. *Process of reparation of fractured bone.* Mr. WILLIAMS exhibited to the Surgical Society of Ireland March 30, a preparation which he conceived to be interesting as affording an opportunity of examining a simple fracture during the process of reparation and besides illustrating one or two points of some importance. The subject of the accident was an old man, aged about seventy, emaciated and apparently of feeble constitution. The fracture was the result of direct violence, having been caused by the wheel of a car passing over the left femur, which was fractured at, or rather a little below, the point of junction of the middle and lower third of the shaft of the bone. He was brought to the City of Dublin Hospital on the 20th of January, and died on the 18th March, so that he lived fifty-seven days from the receipt of the injury; after such a period the formation of callus would, in a younger person, have been probably seen in a more advanced stage; but before drawing the attention of the society to the appearances actually exhibited in the preparation, it would be well to state, very briefly, some of the more prominent circumstances connected with the case during life. It was quite unnecessary to give any thing like a detail of the case; but a few observations were necessary. Thus it would be observed that the broken extremities of the bones overlapped each other considerably, to the extent, indeed, of nearly three inches. The reason of this was, that seeing the advanced age and debility of the patient, no attempt was made to treat the fracture by permanent extension in the straight position of the limb. The limb was, in the first instance, placed on the double inclined plane, and every possible care was taken to prevent the formation of bed-sores; the patient was, after the first few days, when the swelling and tension of the thigh had subsided, supported in the sitting posture on the side of the bed, the limb on the inclined plane being carefully slid out on a platform, and as a sore, nevertheless, began to form over the sacrum, and gangrenous phlyctenæ appeared on the toes of both feet, of the uninjured as well as of the fractured limb, he was soon transferred to Dr. Arnott's hydrostatic bed, but ultimately died in consequence of extensive sloughing over the sacrum. Had any attempt therefore been made to permanently reduce and coapt the fracture in the usual way, the fatal termination of the case would have been greatly accelerated, and hence the very considerable degree of overlapping observable in the present case. About fourteen hours after death the limb was examined. There were some remains of ecchymosis between the integuments and fasci lata on the front and external surface of the limb; the muscles presented a natural appearance, except in the immediate vicinity of the fracture, where they were still slightly infiltrated with blood. The fracture was oblique from above downwards, and from before backwards, and slightly from

within outwards. The inferior extremity of the upper fragment was displaced a little forwards and outwards, and the upper extremity of the lower fragment consequently lay somewhat internal and posterior to the upper portion of the bone. He (Mr. Williams) would first beg the society to inspect the vertical section he held in his hand of the broken extremity of the inferior portion of the femur; it would be observed that on the internal surface of the section callus was obviously deposited between the periosteum and the bone; the periosteum was somewhat, but not much thickened, and showed some slight marks of increased vascularity. On the external surface of the same section, however—that is to say, on the aspect of the fracture, which, though not in contact with, yet corresponded to the inner surface of the upper fragment of the femur, the callus or new bone was deposited in quite a different situation; here there was no bone whatever formed between the periosteum and the old bone, but there was an abundant formation of callus external to the periosteum, deposited on its outer surface and in the muscular and other tissues intervening between the two overlapping portions of bone, and the new bone thus deposited in the heterogeneous tissues external to the periosteum had extended nearly to, but not quite in contact with, the surface or the periosteum of the overlapping upper fragment. In order to make the matter clearer, this vertical section of the semi-diameter of the bone had been detached transversely by the saw, and here, on the one side, the periosteum could be clearly traced over the newly-formed bone, while on the other, or outer side, facing the upper or overlapping fragment of the femur, the periosteum was clearly traceable between the femur and the newly-deposited bone, while not a particle of callus was deposited at this side beneath the periosteum—that is to say, between that membrane and the original bone. If the upper portion of the femur is now examined, we find a very different condition of things; in it there is no attempt whatever at osseous reparation, so far from it that, on the contrary, there is actually atrophy of the extremity of the bone; thus the transverse diameter of the femur is diminished from within fully an inch of its broken extremity, so that the bone tapers off in a conical shape, and, moreover, the medullary canal is considerably increased in breadth, and thus the actual quantity of bone in the upper portion of the femur is greatly diminished, while no new bone is deposited. Mr. Williams said that he thought this remarkable difference in the condition of the two fractured extremities of the femur was explained by the situation of the fracture, which had occurred about half an inch above the entrance of the great nutritious artery of the femur, which might be seen here, and as it seemed to him of remarkably large size. Here it was entering the lower fragment about half an inch below its broken extremity, which was thus suitably supplied with blood; the parts could therefore generate new bone, while the deficiency in this respect, in the upper fragment, might be partly, at least, referable to the supply of blood from this artery being cut off by the complete rupture of the nutritious artery of the bone. The condition of the tissues between the overlapping portions of the bone should be mentioned; the cellular tissue was more developed and denser than natural, and much of the muscular tissue seemed absorbed, at least it was intersected with fibrous or cellululo-fibrous septa, rendering the entire of the connecting medium between the overlapping portions of bone dense, resisting, and apparently in a transition state, into a fibrous or fibro-cellular tissue. In this dense structure, as already particularly remarked, new bone had been at the upper part deposited, and that to such an extent, that, had the patient lived, bony union might, Mr. Williams thought, have been effected, notwithstanding the impossibility of keeping the opposed surfaces of the overlapping bones in close and firm contact. He (Mr. Williams) would first observe that he thought this preparation, in the first place, showed that the formation of bone is not limited to any particular tissue, that, as his friend Dr. Macdonald and others maintained, whenever deposition of bone is effected, it is by the nutritious vessels of the part in which the bone is required to be deposited acquiring the power of secreting bone. In the present preparation the deposition of bone was quite irrespective of tissue, but was entirely subordinate to a due supply of blood; this preparation, therefore, he

thought, tended to show that the great difficulty of bony union in some fractures, such as intracapsular fracture of the neck of the femur, fracture of the patella, &c., was not so much due to any other peculiarity in the structure of the parts engaged in those fractures as the sparing supply of blood they are furnished with. Mr. Williams said that Dr. Houston had examined a section of the callus from this case with the microscope, and the detached islets of bone in the yellowish opalescent cartilage were quite obvious.—*Dublin Medical Press*, April 17th, 1844.

At a subsequent meeting of the society, (April 13,) Dr. Houston described the appearances which he had observed in a microscopic examination of a piece of callus from this patient. A section of this callus looked, to the naked eye, like a piece of cartilage—bluish, homogeneous, and compact; but when dried and examined with the microscope, it exhibited in every part innumerable points of ossification—some, isolated and distinct; others, agglomerated in heaps—the whole being evidently in a stage of transition from cartilage to bone. A similar condition Dr. Houston presumed would have been found in his case at a certain parallel stage of its progress towards reparation. Here, most probably, as the result of the irritation of the setons in the ossifying atmosphere of the bone, there had been, in the first place, an effusion of plastic lymph or jelly; then a conversion of this material into an organized bed of cartilage; and finally, an accumulation of osseous matter in the cartilage, at first in the form of minute isolated points, but in time, in such abundance as to repair the lesion and make firm the bones. Acting on the presumption that about the third week was the period at which, if at all, the cartilaginous bed had been formed, and the process of laying down the bone had commenced, he had chosen that time for the removal of the setons; and he had withdrawn them, thread by thread, with a view of guarding against the extremes, either of too great irritation, or of a premature cessation of the reparative action, one or other of which would have been likely to have attended on a forcible and sudden removal of all, at the same moment. He had thought it right, too, not to leave the setons between the bones for a longer period than three weeks, lest a morbid rather than a sanatory action might be set up by the too long-continued presence of the foreign bodies.—*Ibid.*, May 1, 1844.

37. *Reproduction of Bone in Necrosis.* Professor SYME exhibited to the *Med. Chirurg. Society*, Edinburgh, on the 3d of April last, some specimens to show that new bone was formed by the periosteum.

In the first place he produced specimens of the imperfect reproduction which occurs in cases where a portion of bone is removed by mechanical violence, as in the operation of trepanning the skull. The loss of substance here is not completely supplied, but only lessened, by a scanty growth of new bone round the margin of the aperture, diminishing in thickness from the circumference towards the centre, where there is usually a portion of the space occupied merely by a ligamentous membrane. He further illustrated this, by showing the result of experiments on dogs, performed in the way that Sir A. Cooper suggested, by removing a part of the radius, while the ulna was left entire. Here, too, the vacuity is very imperfectly provided with a substitute, by a conical shaped process of new bone from each extremity of the old one, extending from the cut surfaces of the breach, and tapering towards each other, so as to leave a deficiency, occupied by a ligamentous texture. He next showed a similar result from disease in the human subject, nearly the whole shaft of the tibia having died and been discharged without the formation of a successor, the appearance presented being precisely like that of the dog's bone just alluded to, and the imperfection of the limb so great as to require amputation several years after cicatrization of the sores. He then contrasted this preparation with one of necrosis in its ordinary form, where the old bone lies surrounded by a new shell ready to take its place in the event of removal. It is obvious, that this effectual reproduction cannot proceed from the remaining old bone, since it should in that case never be wanting, as there is always part of the shaft left entire, while it

had been found, that the bone possesses in itself very limited power of reproduction. The ample investing shell in question, therefore, not being attributable to the injury of the bone that retains its vitality, must be referred, 1. To separation and thickening of a lamina separated from the bone previous to its death. 2. To the ossification of organizable substance effused from the bone previous to its death. 3. To ossification of the periosteum. 4. To ossification of the neighbouring textures, whatever they may be. The arguments in support of these explanations being very plausible, it has always been considered most desirable to ascertain the truth, by examining the process which usually takes place. But where patients require amputation for necrosis, or sink under it, the disease is almost always either so recent or so far advanced, that the source of ossification cannot be recognized with certainty. In the course of fifteen years' hospital practice, Mr. Syme has met with only three cases that afforded an opportunity of dissection at the instructive period of formation, *i. e.*, from three to six weeks after the commencement of the disease. Simple inspection of the preparations so obtained seems sufficient to satisfy all eyes not obscured by preconceived opinions, that the new bone was formed on the inner surface of the periosteum. The osseous substance was deposited in crusts of uniform thickness, which implied an equality of reproductive action on the surface. The subjacent dead bone was perfectly smooth, which it could not have been if a lamina, however thin, had been detached from it. The periosteum was distinctly traced out and preserved, except at those parts where it had been destroyed by the disease; and it would have constituted the *clouée* or defective portions of the osseous shell. In the early stage of the process the new bone was distinctly deposited in separate masses, which were plainly seen to be insulated from each other when surveyed between the eye and a light.

Dr. Henderson differed from Mr. Syme, and expressed his belief that the periosteum performed, in the process of the regeneration of bone, whether in necrosis or in fractures, only a secondary part—that it transmitted vessels into the organizable matter, which eventually exhibited the characters of bone, but that it did not possess the power of yielding directly a plastic exudation capable of undergoing development into cartilage and bone. He adverted to the investigations of Miescher on the generation of callus, as proving that it was yielded by the old bone only, and observed that the whole scope of the evidence afforded by the anatomy and physiology of bone and periosteum, tended to establish the doctrine, that the periosteum, though necessary indirectly to the growth and nutrition of bone, by affording it a supply of arterial twigs, is incapable of generating bone immediately from its own surface. Satisfied that such was the conclusion to which the formation of callus, and the generation and growth of bone, in the ordinary process of development, unequivocally pointed, he felt great difficulty in admitting that the specimens exhibited by Mr. Syme were calculated to show that the periosteum had an office conferred upon it, in the case of necrosis, which it possessed in no other circumstances. He conceived, that there was nothing in these specimens irreconcilable with the views he held on the functions of the periosteum; and he called attention to the circumstances, that where the new bone, in the specimens, was the thickest, it had an immediate connection with the old—that where detached scales of bone adhered to the periosteum alone, the dead bone over which they lay was in several places rough, intimating that a thin layer had been detached from it, and that where the scales which adhered to the periosteum corresponded to a smooth surface on the dead bone, it was extremely probable that they had originated from plastic matter, which had been thrown out by the inflamed bone, before the occurrence of necrosis. Bone, on becoming inflamed, did not die instantly, and the analogy of all other tissues in the state of inflammation seemed to render it certain that an organizable exudation may take place from the surface of an inflamed bone. These considerations induced Dr. Henderson to deny that the specimens brought before the society by Mr. Syme proved, or even rendered it probable, in the face of all the reasons that could be given for limiting the agency of the periosteum in the growth and reproductions of bone to the secondary rank, which he

had alluded to at the outset, that the periosteum could ever be the source of the new bone which is generated in necrosis.

Professor Miller stated, that he differed but slightly from Mr. Syme, as to the reproduction of bone in necrosis. His creed was very simple. In internal necrosis, of course, the work of reproduction is entirely effected by the surrounding bone. In external necrosis, he considered that the new formation of bone was of two parts, an internal and external, separated from each other by the sequestrum or dead portion in the first instance; but on the separation of this, coalescing and becoming consolidated to form an efficient substitute for the part destroyed. He believed that, in most cases, the doomed bone died very speedily, at least in its external surface, as indicated by its smooth unchanged appearance,—seeming as if a portion removed artificially from the skeleton. That at its circumference, the living bone speedily became universally vascular, and underwent the true inflammatory process; thereby establishing a sulcus of separation, by ulceration, precisely analogous to what takes place in detachment of a slough in the soft parts. That as this sulcus deepened, separation followed close upon ulceration; the depth being as yet altogether inconsiderable, when osseous nodules have begun to make their appearance on and around the living margin. This reparative effort on the surface of the old bone, almost coeval in its origin with that of the process of separation, he considered to be the starting point of the new structure, which thence proceeded in two layers; the *deep*, by what may be termed osseous granulation, following hard on the heel of ulceration in the separative sulcus, forming a continuous mass which occupies the place of what has been destroyed by the ulceration, and which, shooting upwards, assists in the extrusion of the dead part which the ulceration has fairly detached. At the same time a *superficial* layer, from the same origin, extends beneath the periosteum, and in close cohesion with it, apparently formed by that membrane; investing the dead portion on its external aspect, in a more or less continuous sheath of cortical formation—imperfect at certain points, where cloacæ are said to exist.

As to the formation of these cloacæ, he quite agreed with Mr. Syme, that they depended on deficiency of the periosteum. First, we have osteitis, then suppuration, and thereafter the full establishment of the necrosis. The matter collects in greater or less quantity beneath the periosteum, and sooner or later it must be discharged through that membrane, into the soft parts, and thence externally. If an incision be made, as it should be, that aperture in the membrane is permanent; for the acutely inflamed part does not heal, on the contrary, the chasm widens by ulceration. If incision be withheld, the perforation is by ulceration; the loss of substance is more extensive, and consequently more surely permanent. The advancing sheath of cortical bone coming to such an opening is interrupted, and there an aperture in it, termed cloaca, results, proportioned in form and extent to the deficiency of the membrane; for though other surrounding textures, as cellular or muscular, seem to have the power of assuming both the periosteal appearance and function, it is only when they are non-inflamed and capable of emplastie exudation; which in this case they are not, but, on the contrary, inflamed and suppurating, forming part of the canal through which the general purulent secretion is being discharged. In the formation of provisional callus, after simple fracture, he believed that ossification of the plasma was begun by the parent bone, taken up by the periosteum, and continued by the adjacent soft parts at the central or other parts of the periphery, where that membrane might happen to be deficient; and that these other adjacent textures were capable of the assumption of that function, because they were undergoing a grade of the inflammatory process short of suppuration, and favourable to the effusion and nutrition of an efficient plasma.

In death of the entire thickness of a bone, he believed that reproduction took place in a similar manner. That the deep portion shot forth from the truncated extremities of the old bone, assisting by its growth to dislodge the sequestrum; that the external or cortical layer was begun by the old bone, but mainly constructed by the periosteum; that, as usual, on extrusion of the dead portion,

the two new formations coalesced to form the substitute; and that when the death had proved so extensive as to render complete development of what might be termed the *heart* or *pith* of the new formation impossible, reproduction did not occur satisfactorily, if at all,—the cortical portion, when alone and unsupported, being unequal to this end.

Consequently, he believed, that in the reproduction of bone, in general, three textures might be employed. Bone formed bone better and more readily than did any other texture; periosteum was second only to bone, and superior to all other textures in this respect; other soft parts contiguous to periosteum, might supply that membrane's deficiency by assuming both its appearance and function, but only when these other soft parts were themselves not truly inflamed.

This creed he found applicable to all the surgical examples of osseous formation—as in ulcer of bone, fracture, necrosis, change on end of bone after amputation, &c. and capable of satisfactorily explaining all the phenomena attendant thereon.

Mr. Syme had adduced the reparation of deficiency in the cranium as a fact in favour of his argument, that periosteum is the main agent in reproducing bone. Professor Miller thought it had a precisely opposite bearing. The reparation was at first membranous: but after many years the aperture became closed by shelving bone gradually extending from the margins of the old, and evidently the product of that texture alone. Now, frequently, in the operation of trephining, the periosteum was not destroyed, but simply elevated with the rest of the flaps, and afterwards reopened; it was there consequently to secrete bone, if it chose; and, at all events, the dura mater was probably undisturbed, at least an equally efficient and quite analogous membrane; a better membrane, in fact; for a portion of the calvarium deprived of its periosteum by even rude violence, does not necessarily exfoliate, whereas a detachment of the dura mater is almost uniformly followed by necrosis of the corresponding portion of bone. Yet in the repair of a solution of continuity in the calvarium, we seldom if ever find the formation of cortical substitute; all osseous reproduction, in this instance, is from the parent bone alone; neither periosteum nor dura mater partaking in the effort.

Professor Miller also directed the attention of the Society to the *osteophyte* formations, found in the calvaria of women who have died recently after parturition—quoting from a review of M. Ducrest's paper on that subject, in the March number of Dr. Cormack's Journal. The prominent characteristic of this affection was that the new osseous formation was intimately incorporated with the internal surface of the skull, and could scarcely be separated from it, while the dura mater was non-adherent, and but little changed from its normal appearance,—a fact which also told against the idea of the periosteum possessing a superior power of osseous formation.

He begged to repeat, that he believed the periosteum had the power of forming new bone, in an eminent degree; but that in this respect it was altogether secondary to the parent bone. That practically, it mattered not whether the periosteum effused the plasma, as well as superintended its organization and transition into bone, as maintained by Professor Syme; or whether it only nourished a plasma which had been furnished to it by the old bone previous to its death, as maintained by Professor Henderson. And he trusted the society would remember that however the disputants might differ in the minor details, yet on the important and practical point they were all agreed; namely, that the presence of periosteum is *essential* to the formation of the cortical substitute; and that, consequently, in the treatment of necrosis, we ought to have our attention much directed towards ensuring the integrity of this membrane, by early evacuation of pus, and other means calculated to subdue and limit intense and destructive inflammatory action.

Dr. Bennett remarked, that so long as pathologists adopted an exclusive view regarding the production of bone from any particular tissue, so long would there be continual dispute. Selected preparations might be brought forward to support any theory advanced. Modern researches had demonstrated that new bone following fracture or necrosis was formed exactly in the same manner as bone

originally produced in the fœtus. Blood plasma was poured out in the neighbourhood of the injury, which was first transformed into cartilage, and then into bone. The essential part of the process was the exudation of healthy blood plasma, capable of being converted into osseous structure; the particular tissue or vessels which furnished it was a matter of secondary importance. The exudation might be furnished in one case from bone, in another from periosteum, or the surrounding tissues, and in a third, from all of them. Dr. B. considered that each of the views which had been contended for was true to a certain extent, but incorrect, in as far as they were exclusive in their nature.—*Lond. and Edin. Monthly Journ. Med. Sci.*, May, 1844.

38. *Necrosis*. Dr. J. A. LAWRIE relates in the London and Edinburgh Monthly Journal of Medical Science, (August 1843,) four cases of necrosis from which he deduces the following practical and physiological inferences.

"In the treatment of extensive necrosis, two practical difficulties present themselves;—first, in supporting the constitution, and preventing hectic; and, second, in the very tedious process of production of new bone, and the ultimate cure, by discharge of the dead portion. The latter is known to consist in the deposit of new bone, around the old and dead bone, encasing it, and subjecting it to the very doubtful process of absorption, or of separation and escape through the cloacæ in the new bone, and the ulcers in the soft parts. This process is so tedious as sometimes to occupy a lifetime, or to subject the patient to the very painful and uncertain operation of removing the dead bone, or even amputating the limb. So far as I know, no efficient means of meeting and overcoming these difficulties have yet been proposed. The two cases which I have related, show that in certain cases, and these the most severe, they may be obviated by the early removal of the dead bone, before it is encased or entangled in new bone. In neither of the cases was any incision required; in the first, on account of the extensive exposure of the bone; and, in the second, from its being broken, and its extremity projecting through an opening in the soft parts. We cannot, however, expect to find all our cases so favourably circumstanced. In some, the first steps will consist in exposure of the dead bone, by extensive incisions; and the second, in removing the dead bone by the saw and forceps. I have, at present, a case of necrosis of the tibia, under treatment, in which these steps will require to be put in practice.* The advantages of the operation are too numerous and obvious to require to be detailed.

"The physiological inferences which may be drawn from these cases, to my mind decide the question, as to the source from which bones are repaired, or regenerated after necrosis. The opinions on this subject were long divided between the periosteum and soft parts on the one hand, and the bone on the other. That bone, or at all events, calcareous matter, may be deposited in almost any organ or membrane of the body, is too well ascertained to make it improbable, that the same substance may be formed by the soft parts in the neighbourhood of bone, or by the periosteum, whose peculiar functions are to envelope and invigorate bone. That periosteum can form bone I well know, having seen bone deposited on both its surfaces, and into its substance, in considerable quantity. But it is one thing to admit that the vessels of periosteum may secrete or deposit spiculæ of bone, and another, to subscribe to the doctrine that this membrane is the efficient agent in the production of the mass of ossific matter, necessary for the reunion of broken bones, or the reproduction of an entire bone with the exception of the epiphysis. Both of these processes I have long been convinced are performed by bone, and can only be effected through its agency. It is not my intention to speak of the union of fractures,—that subject not being at present under consideration. I shall therefore limit myself to the second,—reproduction of new bone after necrosis; and in the first place, it is worthy of remark, that those bones which have epiphyses are much more certainly and rapidly regenerated after necrosis, than the flat bones, and those

* Since this paper was written, the case has been operated on, and with complete success.

which have no epiphysis. If a large portion of a cranial bone die and separate, it is frequently never restored; if it be renewed, it is by membrane in the first instance, and ultimately by the very slow transformation of that membrane into a thin plate of bone. I am not aware that the bones of the face, excepting of course the lower jaw, are ever restored. On the other hand, the facility with which the cylindrical bones pour out osseous matter is well known. In the next place, if the epiphyses be removed with the body of the bone, no new bone will be formed. This is most frequently illustrated, in the lower jaw, and phalanges of the fingers. In the remarkable case published by Mr. Perry, (*Med. Chir. Trans.* xxi. p. 90,) of necrosis of the lower jaw, while the epiphyses preserved their vitality, a powerful effort was made to restore the dead part; but after the epiphyses died, the new bone died also,—the whole came away, and no further attempt to renew the bone appeared. Lastly, in the cases above related, and I believe that attentive observation will confirm the remark in all similar instances, the new bone was formed by the epiphyses. Where the old bone is extensively exposed, osseous matter is poured out by both epiphyses behind the dead bone, or behind that plane of the bone which is least exposed, and farthest from the surface; the new bone appears in the form of shoots or processes, which advance from both epiphyses, until they meet and coalesce. The deposition is continued from behind forward, until the integrity of the new bone is restored, and the old bone enveloped in it. It is in this way, and not by the deposit of bone on the surface of the periosteum, that the old bone is encased in new.

“A question, at once of physiological and practical importance, here suggests itself. What part does the dead bone play in this process? Does it act as a stimulant to the deposit of ossific matter? Does it serve as a mould for the new bone? If it were removed, would the process be arrested? In all of these questions I would reply in the negative. I do not think that the presence of dead bone is more required to assist in any of the processes involved in the above queries, than the presence of a slough of the softer parts in the generation of new flexible tissues. When the entire thickness of a cylindrical bone dies, the first step towards regeneration consists in an attempt to get rid of the dead part, by the absorbents forming a groove round the dead portion, gradually cutting it through, and isolating it from the living. The next step, to a certain extent cotemporaneous with the first, is the deposit of new osseous matter all around this groove, springing from the bone; the last is the surrounding of the old bone with new, in the manner already explained. The new bone begins to form before the old has separated, and continues after the connection between the two has been quite dissolved. Currie's case appears to me to entitle us to answer the second and third queries in the negative; the old bone was removed long before the new was deposited; the process so far from being thereby arrested, was greatly accelerated, and the form of the new bone was much more symmetrical than if it had been slowly deposited around the old as a mould. It may be asked, if this view of the matter be correct, why is it not thrown off as is a slough of cellular tissue? I believe that the impediments to its escape are mechanical, and not physiological; the soft parts which cover it, the irregular line in which it dies, and the vitality of the cancellous structure next to the epiphysis, extending for some distance within the dead outer case, render its escape impossible, long after its presence has become a source of retarding, it may be, of fatal irritation.

“How soon may the dead bone be removed by operation? The answer appears to be:—As soon as the inflammatory stage has passed, suppuration been fairly established, and the constitutional symptoms will permit. The nature of the operation to be performed must depend on the extent of the disease. When the entire thickness is involved, the necrosed part should be exposed, and a portion cut out, as in Currie's case, and occasional attempts made to extract the portions connected with the epiphyses. There is little risk in hurrying them away too soon, provided violence is not used in the attempts; they will become loose when the natural process of separation is complete, and then compara-

tively little force will be required for their extraction. When the surface of a bone only is exposed and necrosed, it seldom happens that the dead part is encased in a new bone. It generally scales off, and finds its way through the ulcer in the soft part, or through an abscess. Should the dead portion be extensive, and the position of the bone admit of it, it would save time to lay open the sinuses, expose the bone, and remove with a sharp chisel all the dead portion.

39. *Expediency of operating in Cancerous Affections.*—In our preceding Number, (p. 454), we gave a brief notice of a memoir on this subject, read to the Royal Academy of Sciences by M. LEROY D'ETIOLES, and we now add some further details.

The most important point in this surgical question is to determine if the disease is, in the first instance, purely local, and finally degenerates into a constitutional malady, and if an early operation prevents this degeneration. This belief, though generally acted on, is far from being borne out by statistics. Thus, M. Leroy states that in 801 operations, 117 were performed within less than a year after the first appearance of the disease, and that of these 117 cases 61 had relapsed when the documents relating to them were supplied to him.

The results of operations for cancer of the lip are curious because of the difference that exists between the two sexes. Thus, in 633 males, there were 165 cases of cancer of the lip, 114 of which were operated on by excision, and 12 by caustic; the relapses were 15, that is to say, about one-eighth. Among 2148 females affected with cancer, 34 had cancer of the lip, 22 were operated on, and 7 relapsed, that is to say, a third.

This difference in the relapses depends on the difference in the cause and nature of the malady. In the male, canceroid tumours produced by an external cause tend to diminish; in the female they degenerate into true cancer. In the cancer of the tongue, there is not the same difference in the result—the termination is equally fatal in both sexes. In 9 operations on cancer of the tongue, 3 were performed in less than a year from the commencement of the disease; the 6 other patients died from relapse of the disease.

The following are the results of operations on tumours of the breast:—

Of 277 operations, 73 have been performed within the last two years, and the result is not yet known; 204 cases remain, and in 24 deaths occurred, in one case soon after the operation, and 87 others have already relapsed, so that more than one-half of the operations have failed; 27 were operated on in less than one year from the first symptoms of the affection.

M. Leroy finally maintained the following conclusions:—

1. Extirpation does not arrest the progress of cancer.
2. Extirpation should not be adopted as a general method, except in cancer of the lip and of the skin.

3. Cancer of other organs should not be extirpated, except when hemorrhage from ulcerated cancer threatens speedy death. M. Leroy's memoir was founded on the results of the practice of 70 surgeons, who communicated to him the particulars of all the cases of cancer they had operated on.—*Dublin Med. Press*, May 1844.

40. *Description of a peculiar form of Ulceration to which Cicatrices are liable.*—Mr. ROBERT SMITH communicated to the Surgical Society of Ireland, (April 13th, 1844,) a description of a peculiar form of ulceration to which cicatrices are liable, and which he terms the "fibrous ulcer." Mr. Smith does not consider it as a malignant disease, though he says that in a majority of cases, it is only curable by free excision.

"This peculiar ulcer generally makes its appearance only in a cicatrix; nor does the nature of the lesion of the skin, of which the cicatrix is the result, seem to exercise much influence upon the occurrence of the subsequent morbid change, for it is established with equal frequency in the cicatrices of lacerated wounds, scalds, or burns. I have never seen it attack the cicatrix of a simple incised wound. It does not appear until the cicatrices have existed for several

years, and its progress, when once formed, is singularly slow. It frequently happens that the cicatrix resulting from the original injury is attacked by ulceration, heals and again ulcerates, the ulcer presenting no remarkable or peculiar character. This may occur repeatedly between the period of the receipt of the injury and the establishment of the ulcer under consideration; but when this is once formed, there is an end to every process of réparation; but so slow is this ulcer in enlarging, that a long period may elapse before the patient's attention is sufficiently attracted to it to induce him to seek for professional advice. Gradually and surely, however, the disease spreads, and the ulcer increases, not only extending by its circumference, but also becoming deeper, and engaging in their turn all the subjacent structures, until at length the periosteum (if the disease be situated over a bone), becomes implicated, and ultimately the bone is absorbed and the fracture is the result. The disease, no matter how long it may have existed, does not contaminate the lymphatic glands. They may become sympathetically enlarged, but do not present those characters which distinguish them when they are the seat of scirrhus disease. The formation of the fibrous ulcer is usually preceded by the appearance in some part of the cicatrix of a small, insular, hard tumour or wart-like excrescence, the surface of which is smooth, and covered by the layer of cuticle which invests the whole surface of the cicatrix. This tumour remains for a variable period of time free from ulceration and devoid of pain. Several such tumours may form before the process of ulceration begins, though the reverse happens in the majority of cases, and indeed, in some examples of the disease, the ulcer is not preceded by any such tumour, but the cicatrix here and there presents spots of ulceration, which gradually coalesce, and secrete a thin, unhealthy matter. By slow degrees, the ulcer enlarges and ultimately spreads beyond the limits of the original cicatrix; its surface presents a very unhealthy aspect, being in some cases covered with a number of hard circular tumours, resembling the granulations of cancerous ulcer; while, in other examples of the disease, nothing like granulation is seen, but in their place a number of villousities of fibres of a white colour, a dense, but at the same time, brittle texture, placed close to and parallel with each other, while at the same time they are perpendicular to or at right angles with the surface of the surrounding integument; this singular arrangement characterizes the ulcer, and also exists when the latter presents a granulated surface; for the granulations upon close examination, are found composed of a collection of thin parallel fibres which are perpendicular to the surface from which they spring. With the point of a needle they can be easily separated from each other, and very often even the end of a small probe can be passed between them down to the bottom of the ulcer. It is from this anatomical character that I have ventured to apply to the disease the name of 'Fibrous Ulcer.'

"The discharge is thin, purulent, offensive, and occasionally streaked with blood; the pain, at first but slight, becomes more severe and constant, and a certain amount of hectic fever shows itself as the disease advances. The integument surrounding the ulcer is usually diseased to a greater or less extent, being frequently studded with small wart-like tumours; it is thickened, divided by furrows or fissures, more or less deep. By degrees the ulcer spreads over the whole of this diseased integument, and a fresh portion of the skin then becomes the seat of the same morbid process, presenting the same fissured appearance, as it were preparing the way for the spreading of the ulcer which may then attain a very considerable size. From what has been said, it appears that the ulcer may present either a granular and tuberculated or a fibrous surface. In the former case, however, the peculiar arrangement of the fibres which I have described can still be demonstrated; the granulations are large, round, firm, and bleed freely; the interval between them are dross, present a foul, yellowish or greenish aspect; the edges are irregular, and the discharge offensive. In all the cases which I have seen the surface presented a number of white dots, which, upon close examination, were found to be the extremities of the fibres, composing the granulation. Sloughing frequently attacks and destroys the entire surface, and when this process has ceased, the ulcer again presents its former

tuberculated surface. This form of the disease closely resembles the ulcer of carcinoma. When the ulcer from the beginning has a distinctly fibrous surface, destitute of granulation, this sloughing process does not usually take place, but the discharge is still fætid and profuse. In both cases the patient is destroyed by hectic fever, and in both, the state of the surrounding integument is similar, the same fissures are seen, with here and there a few small wart-like elevations."

"The disease resembles the ulcer of the eyelids described by Dr. Jacob, in not contaminating the lymphatic glands, in destroying every structure with which it comes in contact, and in the intractability of its nature, but it differs from the ulcer of the eyelid in the fibrous arrangement to which I have alluded; neither of the ulcers are malignant, in the full and proper meaning of the word. I have never seen the fibrous ulcer cured or even much benefited by local applications. Excision seems to be the only mode of treatment to be relied upon; it is therefore a matter of the greatest importance to be able to recognize the disease in its commencement, and before it attains such a size as to render excision impossible."—*Dublin Med. Press*, May 1844.

41. *Comminuted fracture of the base of the Cranium produced by a fall on the feet.* By M. ROBERT. A carrier, about forty years of age, fell from a height of about thirty-five feet, on the 24th of May, and lighted on his feet. He was slightly stunned, but did not appear to be otherwise hurt, and walked home, and was able next day to return to his occupation. Four days after, he began to complain of acute pain in the right ear, and passed a sleepless night. Three weeks after, acute headache came on, and his right eye was observed to squint inwards. He then entered the hospital of La Pitie, where they endeavoured to relieve his headaches by means of bleeding, blistering, and morphia, but without affording him any relief. He then went to the hospital Beaujon, and came under the care of M. Robert. No paralysis of motion or sensation was observed in any part of the body. Fixed pain in the head, and darting pains in various parts of the body were alone complained of.

On the 20th of September, or four months after the accident, he was suddenly seized with violent delirium, and in spite of active depletion, died in twenty-four hours.

On dissection, the two clinoid processes of the sphenoid bone were found separated from each other, and from the square plate; the petrous portion of the temporal bone was fractured transversely through its upper third, and a large scale detached from the bone. Though the brain was examined with care, it presented no morbid appearances. The arachnoid membrane opposite the fractured portions of bone, and over the central portion of the posterior lobes of the brain, was slightly opaque. The eighth pair of nerves was found torn across.

M. Robert remarks, that this is one of the most interesting cases of fractured base of the cranium on record, seeing that no symptoms followed the fall which could lead to the suspicion of such a severe accident, and seeing that the fatal symptoms did not come on till four months after the injury. Dissection alone showed the probable cause of the squinting—viz., from the rupture of the eighth pair of nerves.—*Ed. Med. and Surg. Journ.*, Ap. 1844, from *l'Experience*, 28th Sept. 1843.

42. *Polypous tumour of the Bladder removed by lithotriptic instruments.* By M. VACHE. A man addicted to strong drinks became affected with all the symptoms of stone in the bladder, constant desire to micturate, pain in passing water, which was occasionally suddenly stopped, and was frequently mixed with blood, &c. On being sounded carefully several times, a soft tumour was detected projecting from the right side of the trigonal space of the bladder. By careful manipulation it was ascertained that this tumour was connected with the bladder by a narrow neck, and, by using lithotritic instruments, it was seized and partly destroyed. The patient was put in a bath, and there passed some fragments of the polypus and a little blood. The next day more of the polypus was passed.

No fever or hemorrhage ensued; and five days afterwards, the remainder of the tumour was broken down, and many large pieces came away with the urine. The pieces had the exact character of nasal polypus. No fever or hemorrhage followed the operation; only the first urine passed after the operation contained a little blood. Eight days after, the instruments were again introduced, but no remains of the tumour could be discovered in the old site; but a small fungous projection with a broad base was felt on the left side of the trigonal space. The projecting portion of this was removed in the same way. The patient, from this period, got rid of all his uneasy sensations; his urine was retained for a longer period; and, six weeks after the first operation, he was dismissed cured. The most careful examination failed to detect the slightest remains of the fungous tumour.—*Ibid.* from *Ibid.*, 5th Oct. 1843.

43. *Foreign bodies in the external Auditory Canal.*—M. MARCHAL related to the French Academy of Medicine the following case:—

A captain in a cavalry regiment, began to be rather deaf of the right ear, in the year 1821. One day, during the winter of that year, he perceived a kind of motion in the ear; it seemed to him as if something had given way, and for a short time he heard much better. From that date he remained subject to occasional deafness, and to humming in the right ear. At the beginning of the present winter he was seized with violent and continued headache, with buzzing, and nearly complete deafness on the right side. As these symptoms were attributed by me to a certain degree of cerebral congestion, I bled him from the arm, and applied fifteen leeches over the right ear. The headache was calmed, but the humming continued. I then examined the ear carefully; this I had some trouble in effecting, from a certain degree of flattening and thickening of the canal. Nothing was discovered, but thinking that there might be some hardened cerumen deeply situated, I ordered injections with an emollient fluid. These injections were continued, until one day, to the great surprise of the patient, a rosary-bead escaped. From the alteration which it had undergone, it is evident that it must have remained a great length of time in the ear. M. Smidt does not remember when it was introduced, but thinks it must have been when he was only four or five years old, in which case it would have remained forty-five years in the ear. The bead being perforated, M. Smidt, rationally enough, conjectures that the different positions it assumed explain the alternations of surdity and tolerable audition which had so long been observed. From the moment of the extraction of the foreign body, he ceased to suffer from headache, and the audition became as perfect on the right as on the left side.

“Cases such as the above,” said M. Marchal, “in which foreign bodies in the ear have remained long unrecognized, are not rare in the annals of science. Among these are two worth recalling to memory. Power was treating a young girl affected with abundant salivation, who had fallen into a state of marasmus, and seemed nearly expiring. He had tried, without success, every means of treatment that he could think of, when he was induced, by some reason or other, to examine the auditory canal. From this he extracted a piece of fetid wool, of the presence of which the young girl was totally unconscious, and she very soon recovered her health. The second case is given by Fabricius, of Hilden. A little girl allowed a small ball of glass to get into the meatus auditorius. Vain attempts were made to extract it, and it was lost sight of. Some time afterwards hermicrania on that side made its appearance, as also incomplete paralysis of the corresponding side of the body, accompanied by pains similar to those of the head, and, like them, subject to changes under the influence of atmospheric variations. After suffering five years she was seized with epileptic fits, and the left arm became atrophied. Fabricius learnt, by chance, from his patient, the circumstance of the glass ball having been introduced years before into the ear. On examination he ascertained that it was still there, extracted it, and the accidents ceased. In this case the whole train of symptoms appear to have been produced by pressure on some branches of the fifth pair.”

Baron Larrey, during the inspection of Algeria, which he made a short time

before his death, used to recommend to the soldiers to cover their ears well when they slept in the field, in order to prevent the penetration of insects, or the deposit of their larvæ. On one occasion a man affected with incurable otorrhœa was presented to him. He examined the ear, took hold of a pair of forceps, and drew out a white worm, two-thirds of an inch in length. The otorrhœa was, as may be supposed, soon cured.

M. Begnin remarked, that in the army of Africa such cases were not rare. He had seen several instances in which insects had thus deposited larvæ in the ears of soldiers, who had subsequently presented very anomalous symptoms.—*Lancet*, March 16, 1844.

44. *Fractured Pelvis, with laceration of the Bladder.*—By M. HALL, Esq. A stout man was run over by a heavily laden wagon. When seen by Mr. Hall, half an hour after the accident, the patient was in a state of extreme collapse, with a pulse scarcely perceptible; on the slightest motion he complained of much pain in the back, and thought the wheel had passed transversely over the loins. He was perfectly conscious, and answered questions intelligibly. There had been some hæmorrhage from the penis. There was slight distension of the hypogastrum, which was more manifest in the right iliac region. The right ilium was very movable, and crepitus could be distinctly felt extending backwards towards the sacrum. External warmth, and internal stimuli, were immediately had recourse to, and after the lapse of a short time symptoms of reaction appeared.

Nine hours afterwards, when again seen, the pulse had risen; no urine having been passed since the accident, a catheter was introduced, but no urine could be obtained. Some hours afterwards the catheter was again introduced, but with the same unsuccessful result. Extravasation of urine evidently was taking place; several deep incisions were made in the distended parts, and an exudation of urine followed. The next day collapse again came on, and the patient died forty-five hours after the accident.

Autopsy.—The scrotum distended, with lividity there and the right iliac region; the upper part of both thighs much distended with fluid. The cæcum and right ascending colon excessively tympanitic, and full of black patches from effused blood. The symphysis pubis completely separated to the extent of at least one inch and a half in the upper portion. On dissecting back the bladder, it was found that the right fractured end of the pubis, which projected inwardly, had entered (below the reflection of the peritoneum) that *viscus*, producing a perforation of its tunics to the extent of two inches or more; another laceration existed, less in extent, but more posteriorly towards the right side. Several loose fragments of bone were quite detached in the pelvis; two or three were in the cavity of the bladder, *which was much contracted*. The right ilium was fractured through its whole length, and the division of bone appeared to extend through the sacrum. A complete separation of the fractured portion of the ilium had taken place. The pubis was also fractured obliquely through the *right foramen ovale*, and from this part had several rough projections pointing inwardly; these most probably were the cause of the inferior rent.—*Prov. Med. and Surg. Journ.* May 1, 1844.

45. *Cure of Nævi Materni by inoculating with Croton Oil.*—M. LAFARGUE recommends the following method of curing nævi materni. Five or six punctures to be made on and among the nævus, with a lancet dipped in croton oil, just as in vaccination.

Each of these punctures, he says, causes immediately a pimple, which, in thirty-six hours, is developed into a little boil. These boils unite, and form a red-hot painful tumour, covered with white crusts, and resembling a small carbuncle. Two days afterwards the scabs separate, and in lieu of the nævus is seen an ulcer, which is to be treated on general principles. It would be dangerous to make more than six punctures on a very young infant, as the irritation and fever are considerable.—*Prov. Med. Jour.*, Feb. 17, 1844.

46. *Extirpation of the Astragalus*.—M. ROGETTA read to the Royal Academy of Sciences, Feb. 13th, a memoir, written, conjointly with M. Fournier Deschamps, on this subject. The following are the conclusions of the memoir:—

1. The power which luxates the astragalus usually acts through the medium of the tibia, and converts that bone into a lever of the first order.

2. Luxation of the astragalus usually occurs in young and vigorous persons; in fact, it presupposes great resistance in the luxating lever, (the tibia.) In old persons, the bones are fragile and easily broken, consequently the tibia generally breaks, and the force being then expended on the bones, the leg can scarcely lacerate the skin and displace the astragalus.

3. The astragalus is more easily dislocated when the forepart of the foot is fixed by some invincible obstacle; the weight of the body then acts by communicating an impulse to the tibia, which is converted into a lever of the first order; the fulcrum of the lever being the calcaneum, the power being applied at the knee, and the resistance being at the ankle. The leg and the foot are reciprocally extended. The external malleolus is usually first fractured, and then the mortise of the tibia acts powerfully on the astragalus.

4. When dislocation of the astragalus is complicated with a penetrating wound of the joint, the wound is usually consecutive to the luxation, and is caused by the continued action of the lever.

5. When dislocation of the astragalus is complicated with fracture of the malleoli, such fracture usually precedes and favours the occurrence of the dislocation; fracture of the shaft of the tibia is, on the contrary, consecutive to the dislocation, and is caused by the fall of the body.

6. Luxation of the astragalus, accompanied with rotation of that bone on its axis, supposes that the integuments of the dorsum of the foot are not ruptured. If a wound exists it must be consecutive.

7. The astragalus is seldom fractured at the same time that it is dislocated. When it is so fractured, the complication always precedes the luxation and supposes the intervention of a much greater violence than when the bone has been luxated without being fractured. The broken part of the astragalus always corresponds to its pulley, and should always be regarded as a foreign body and removed.

8. In order that luxation of the astragalus may occur, it is necessary that the foot and the leg should be so extended on each other that the tibia becomes almost parallel to the bones of the tarsus.

9. Extirpation of the astragalus has been frequently performed, and almost always with success, and the bad symptoms, existing previous to that operation, have subsided soon after its performance. This result, as it shows that the operation acts as if by removing strangulation, leads to the precept that the pulley of the astragalus should always be removed entirely. The scaphoid process of the astragalus may, on the contrary, be left *in situ* if it has been broken off and retains its ligaments and natural relations.

10. When serious symptoms supervene after extirpation of the astragalus, they should be regarded as unconnected with the operation, being, in fact, caused by the primary injury sustained by the parts, or by injudicious attempts at reduction previous to the extirpation of the bone.

11. The circumstances requiring amputation are independent of the luxation of the astragalus and the penetrating wound of the ankle-joint; they are extensive destruction of the soft parts, crushing of the bones of the leg, &c.

12. Extirpation of the astragalus does not always cause either ankylosis of the ankle-joint or shortening of the foot, as is commonly thought; if the malleoli are not fractured, we may hope for recovery with ankylosis or much limping.—*Dub. Med. Press*, Ap. 24, 1843.

47. *Treatment of obstinate Strictures of the Urethra*.—Prof. SYME, in a paper read before the Medico-Chirurgical Society of Edinburgh on the treatment of stricture of the urethra in cases where the ordinary means prove inefficient, endeavoured to show that in such instances, an attempt to effect dilatation by bou-

gies was no less dangerous than useless. Division of the stricture either by subcutaneous puncture when it is seated in the pendulous part of the canal, or by free incision upon a grooved director when it lies behind the scrotum, was recommended, as having proved completely successful in cases that had resisted every form of dilatation.—*Lond. and Edin. Month. Journ. Med. Sci.*, May, 1844.

48. *Fracture of the Malleoli*.—M. BERARD read to the French Academy of Medicine, Jan. 8th, a report on a memoir by M. Laserre on fractures of the external and internal malleoli at the level of their articular surfaces. The memoir was founded on four cases. In the first, both malleoli were fractured at the level of the articulating surface of the tibia by a fall from a house. Amputation was performed, and the patient recovered. The second case was quite analogous: amputation was followed by death. In the third case, M. Laserre attempted to resect the fractured extremities of the bones; the operation did not succeed; the limb was amputated, and the patient died. The fourth case terminated more happily; the fracture was transverse; both bones of the leg projected through a wound on the external surface of the joint. The fragments were reduced, and an ordinary apparatus applied. Union was completed in eight months. After fourteen months the patient resumed his usual occupation, and only suffered from stiffness of the joint. M. Berard first asked if it was not better to amputate immediately in those cases when the parts seemed too much injured to hope to save the limb, than to make an useless attempt to do so after which that extreme measure had still to be resorted to? He also considered the question whether this was not a case in which subcutaneous section of the tendo-achillis should be performed previously to attempting the reduction whenever tetanic contraction of the muscles of the leg opposed coaptation of the bones?

M. Velpeau considers resection as often the best measure in this accident. These fractures he stated are not always transverse, and when oblique it is almost impossible to effect reduction. Unquestionably, dividing the tendo-achillis would tend to facilitate the reduction, but in some cases, that proceeding would, M. Velpeau thought, be insufficient. Resection, on the contrary, renders reduction greatly easier, and also obviates recurrence of the displacement—moreover, it prevents or lessens the consecutive accidents (always very serious) caused by this fracture. Muscular contractions come on after reduction, and are very likely to displace the bones again; but this event is much less liable to occur when the bones are shortened.—*Dublin Med. Press*, March 27, 1844.

49. *Berthold's method of arresting Hemorrhage from Leech-bites*.—Cut a piece of caoutchouc, about one line thick, and half an inch square; hold one surface of it to the flame of a candle till it becomes softened and melted; when it is cold rub it on blotting-paper, to make it smooth; then, having wiped off the blood, and compressed the bleeding point with the finger for a few minutes, apply the caoutchouc, and cover it with a strip of adhesive plaster. It should not be disturbed for some hours.—*Prov. Med. Journ.*, Feb. 24, 1844, from *Boucharadat's Annuaire de Thérapeutique*, 1844.

50. *Lithontriptic remedies*. M. BOUCHARDAT gives at some length a report by MM. Gay-Lussac and Pelouze on the subject of those remedies, on which they have experimented for two years. They first give the result of their experiments on stones out of the body, submitted to solutions of the bicarbonated and pure alkalis, of borax, and of the acids, which are any thing but encouraging; and then they observe respecting the internal administration of alkaline remedies, that although they do not profess to deny all the cases in which calculi have been reported to be dissolved, yet that they cannot help saying that those persons are labouring under a delusion who think that large calculi can be dissolved in a few weeks by these means. After hinting at the possible ill consequences which might arise from making the kidneys secrete alkaline urine during several months or years, they remark, that in a vast number of well au-

thenticated cases, these medicines have only *changed the diathesis*, and caused a lithic calculus to be coated with phosphates; or, after a lithic calculus has been removed, they have caused it to be succeeded by a phosphatic one. Besides, it is well known that the addition of an alkali to certain organic matters causes the formation of an acid. [It is well known that oxalic acid is prepared by heating wood with lime; and Prout has pointed out the possible origin of oxalic calculi in the improper administration of alkalis.] M. Prunelle, the inspector of the Vichy springs, has remarked that several patients, after beginning an alkaline course, have passed an immense quantity of lithic gravel and sand, which must have been of recent formation, for it was far too much to have been merely deposited in the kidney. Their experience of the results of injections, or rather *irrigations* of the bladder, were likewise any thing but encouraging; some uric calculi were softened by alkaline solutions, and one of the phosphatic variety was entirely dissolved by the dilute nitric acid after Sir B. Brodie's plan; but in most cases either the calculi remained untouched, or the patient was obliged to discontinue the treatment, through irritation of the bladder.

MM. Gay-Lussac and Pelouze state that they have not been able to detect the *hippuric* acid in the urine of persons to whom the benzoic acid was administered, as was asserted some time since by Mr. Ure: but they several times observed that the urine of persons who were submitted to the experiment had a pleasant alcoholic smell, and kept for several days without apparent change.—*Ibid.*

51. *Removal of a diseased Ovarium terminating fatally on the seventh day.*—By T. M. GREENHOW, Esq.—The patient was 29 years of age, and married. For four years she had suffered from frequent discharges of blood from the uterus. Eighteen months ago, six months after her marriage, the swelling in the abdomen commenced at the pubic region, and rapidly increased till it attained a large size, her strength all the while declining, from the constant uterine discharge. The abdomen was tapped; only a little blood escaped, but afterwards nearly a quart of dark-coloured fluid was discharged from the wound daily, for about a fortnight.

Before the operation of removing the tumour, which was performed on September the 3d, the abdomen was about as large as at the full period of utero-gestation; there was fluctuation in one or two parts, but the tumour generally was firm, and felt as though divided into separate masses. The incision reached from a little below the ensiform cartilage to near the pubis. Several adhesions existed in different parts, the principal one being to the omentum, which was spread over the upper part of the right side of the tumour. These adhesions were divided with the bistoury, and then the tumour was raised, with some effort, owing to its great size and weight, and from its situation; double ligatures were passed through its pedicle and firmly tied, and this part being divided near the tumour, it was liberated from its attachments and removed. Two arteries bled freely, one in the divided omentum and the other in the pedicle; upon these being secured, the wound was brought together by sutures and adhesive plaster, and a bandage applied. The operation was well borne by the patient, although she vomited several times towards the end; the quantity of blood lost did not exceed six ounces. The symptoms which followed were chiefly great retching and vomiting; constipation of the bowels; quick pulse; tenderness and distension of the abdomen; and she died on the morning of the seventh day.

On the post-mortem examination the folds of the intestines and the omentum were found glued together by recently effused lymph. There was inflammation, with points of ulceration, near the pyloric orifice of the stomach. The uterus was healthy, but its cavities were lined with a vascular membrane, like the decidua. The morbid growth had been attached to the left broad ligament. On examining the tumour it was found to weigh twelve pounds seven ounces, and to be more than two feet in circumference. The surface was smooth and of a pale colour, resembling that of the skin. With the exception of a few cysts containing a yellow fluid, the general mass was composed of a dense and vas-

cular cellular structure, with a membrane of small cells or cysts pervading its substance. The author concluded by making some remarks on the case. He directed attention particularly to the disease found in the stomach, which he considered had an important influence in leading to the fatal termination, and thought, on the whole, that the result of the case did not offer a strong argument against the resorting to a similar mode of treatment in such cases.—*Lancet*, Jan. 20, 1844.

52. *Case of alarming Syncope, from the admission of air into a vein during an amputation at the shoulder-joint.* By B. B. COOPER, ESQ.—The patient, a female nineteen years of age, was admitted on the 17th of May, 1843, under the care of the author, for enlargement of the middle third of the humerus. She had suffered pain in the seat of the disease for eight months, but the swelling did not commence till six weeks before her admission into the hospital. From the history and the examination of the arm, the tumour was considered to be a malignant disease of the bone, and amputation at the shoulder-joint was resolved upon. This operation was performed on the 23d of May. The arm was removed in less than a minute, and with very little loss of blood. When the limb had been severed from the body, the patient, who had borne the operation with great fortitude, expressed her thankfulness in a firm and audible voice. The subclavian artery was immediately secured, but its compression still retained upon the first rib, as there were small vessels requiring ligation. The author then proceeded to remove a gland, which was somewhat enlarged, from the axilla; and while dissecting it from its cellular attachments, he distinctly heard a peculiar gurgling noise, like air escaping with fluid from a narrow-necked bottle; and at the same instant the patient fell into a state of collapse, threatening immediate dissolution: the countenance was deadly pale; pupils fixed, and unobedient to light; the pulse quick, small, and fluttering, although at intervals regular; the respiration was irregular, being hurried and feeble, and attended occasionally with a deep sigh. The patient was directly placed in the horizontal posture, the flap brought over the wound, and retained by plaster; and various stimulants were administered. An hour elapsed before she was sufficiently recovered to be removed from the operating theatre. Upon being placed in bed, she passed her fæces and urine involuntarily. When the reaction was coming on, she uttered a continued whining cry, and maintained a constant motion of alternate flexion and extension of the right leg, while the left remained perfectly quiescent, and seemed insensible to feeling, as well as motionless. She complained also of pain running up the right side of the head and neck. For several days she remained with her eyes closed. The lower extremities in the same condition as described, and the pulse very frequent. It was found necessary to give her opiates at different times, which relieved her general restlessness, and procured sleep. On the fourth day, the left leg was also affected with involuntary contractions; but these subsided on the following day. On the 25th day she was able to leave her bed. The motions of the right leg had ceased at this time, but she complained of great numbness and loss of power in the left leg. On the 3d of July she was sufficiently recovered to leave the hospital, having no other unfavourable symptom but a slight dragging of the left leg. The author concluded his paper by adding remarks on the consequences of air being admitted into the veins, and pointed out the resemblance between the symptoms in his case and those presented in other similar cases upon record, as well as in experiments upon the lower animals, made to elucidate the subject. He drew attention to the different effect produced in man compared with brutes by the admission of air, owing to the influence of mental agitation on the motions of the heart in the former. He also dwelt on the various modes of death in such cases, according as the air introduced distended and paralyzed the walls of the right cavities of the heart, or was sent onwards, mixed with the blood, to the lungs, or was transmitted by the arteries to the brain; and he ended by offering some practical remarks on the best mode of guarding patients from such dangerous occurrences in operations about the neck and shoulder.—*Lond. Med. Gaz.*, Dec. 1843.

53. *Dissecting Aneurism of the Ascending Aorta bursting into the Pericardium.*—Dr. LEES exhibited to the *Dublin Pathological Society*, a specimen of an unusual variety of aneurism of the ascending portion of the arch of the aorta. The subject from whom the specimen was derived was a woman about sixty years of age, who was apparently in perfect health on the day of her death, which occurred during the last week. After breakfasting heartily, she suddenly screamed, fell back, and expired in five minutes. On opening the pericardium a large quantity of coagulated blood was found interposed between it and the heart, which was adherent at several points to the pericardium, evidently the result of a former attack of pericarditis. The heart was hypertrophied. There was a rent about two inches long in the cellular coat of the posterior wall of the ascending aorta. The longer axis of this rent corresponded to that of the artery just where the pericardium is reflected from the aorta on the pulmonary artery. The external and middle coats of the aorta in this situation were separated from each other for a considerable space by a quantity of coagulated blood, which reached superiorly as high as the junction of the transverse with the descending portion of the arch, and inferiorly as low as the base of the heart. The cellular coat having been slit up anteriorly, there was brought into view a large transverse rent in the internal and middle coats, not coinciding with the opening in the external coat. It was about an inch in extent, and was situated in the anterior wall of the ascending aorta, at the distance of an inch and a half above the heart. There was an atheromatous deposit in the mitral and aortic valves, and also between the internal and middle coats of the aorta and of the large vessels arising from the arch.—*Dublin Journ. Med. Sci.*, March 1844.

54. *Diffuse Cellular Inflammation following Vaccination.*—The first was that of a female child, aged five years, who had been vaccinated by a respectable practitioner in this city. This child was brought to me about three weeks after it had been inoculated. The arm was then greatly swollen, the swelling extending to the hand; the integuments of the upper arm were of a dusky leaden hue, and a large black slough occupied the situation of the usual crust of the vaccine vesicle. The child's pulse was weak and slow, not exceeding 64. The extremities were cold; tongue dry and coated. There was stupor almost amounting to coma. There were extensive sloughing and hemorrhage from the mucous membrane of the mouth. The integuments of the cheeks adjoining the commissure of the lips were of a livid hue. The respiration was very much hurried, but no physical sign of disease could be detected in the chest. These formidable symptoms, I was informed by the child's parents, first presented themselves between the ninth and twelfth day from that on which it had been vaccinated. The practitioner who inoculated the child assured me that up to that period the vaccine vesicle ran a healthy course, and that he had vaccinated other children with the same lymph in whom the course of the vesicle was perfectly regular.

This child was of a delicate constitution, having been at times under my care for attacks of scrofulous ophthalmia, pneumonia, and bronchitis. Its health, I understood, was good at the time it was inoculated.

Complete recovery, though very slowly, was effected in this case by the following means:—The child's strength was supported by the exhibition of mild tonics and of the diffusible and permanent stimulants. The arm was kept constantly poulticed and fomented, until the sloughs separated, and was then dressed with simple dressings. Muriatic acid, slightly diluted, was occasionally applied around the sloughs of the mucous membrane of the mouth, and at times small doses of opium were given.

The second case was that of a male child, aged eighteen months, who was also vaccinated by a physician of character in this city. About the twelfth day from the period on which it was vaccinated, the arm was attacked with severe inflammation of the erysipelatous character, the vaccine vesicle, as far as I could collect from the parents, having, up to that day, ran a regular course. I saw this child on the sixteenth day. A dark slough, as large as a shilling, then oc-

cupied the situation of the vesicle; the entire extremity was immensely swollen; the integuments of the upper arm were of erysipelatous redness, and such portions of them as were in the immediate neighbourhood of the slough were quite livid. The attending fever was of the inflammatory type, the skin being hot, tongue furred, pulse rapid and full, and the thirst great. Until the fever was subdued by cooling and alterative medicines, and the local inflammation relieved by the application of poultices and fomentations, the sloughing spread with the most alarming rapidity. After the sloughs had separated, the progress of the gangrene having been arrested by the foregoing treatment, a large and deep ulcer remained, with undermined edges, at the bottom of which the muscles of the arm could be distinctly observed; so extensive was this ulcer, that it was not healed for three months, though the case progressed most favourably in every respect. The child, I was informed, was in good health at the time it was inoculated; and I saw other children who, I was told by their parents, were vaccinated by the same matter in whom the vaccine vesicle ran a regular course.

It is obvious, if the accounts which I received were correct, that the unhealthy inflammation in the foregoing cases could not have been produced by the inoculation of impure matter, as other children were vaccinated with the same lymph without any deleterious consequences; the period also at which the inflammation supervened militates against such a supposition. Dr. Dwyer and Dr. Battersby, who, as I have just mentioned, saw the last of these two cases, concurred with me in the opinion that the very severe inflammation which attacked the arm must have arisen from some peculiarity in the child's constitution, or from some local irritation. The fever and symptoms which existed in the first case, appear to have been very similar to those symptoms which attend one of the malignant forms of scarlatina described in Dr. Graves' work, styled secondary fever in my paper published in it, and aptly termed complicated malignant by Dr. Henry Kennedy. There could have been no complication in this case with scarlatina, as the child had been affected with that disease at a remote period from that in which it was vaccinated.

I have recorded these cases not with the slightest idea of creating any prejudice against vaccination, which has proved so eminently useful, but for the purpose of showing its analogy to the other exanthemata, and with a view of rendering practitioners cautious in the management of children whom they have vaccinated, until all inflammation has ceased.—*Dub. Journ. Med. Sci.*

55. *Ununited Fracture treated by Acupuncture.*—A man of a good constitution, ætat. 26, met with a simple fracture of both bones of the forearm. Five weeks after the accident no union had occurred, and the apparatus was again applied, and the limb kept in a state of perfect rest during four weeks longer. At the end of this time, finding the fragments still ununited, M. WIESEL determined upon the employment of acupuncture which he did in the following manner.

Between the fragments of the ulna he introduced two needles long enough to pass completely through the false joint, and allowed these to remain in place during six days, by which time they had produced great tumefaction of the part and caused much pain. Fifteen days after this, a similar operation was done upon the radius, which, after a few days, was followed by acute pain and slight suppuration. After the application of the needles the arm was carefully supported in splints, and at the end of six weeks consolidation was found to be complete.—*Gaz. des Hôpitaux*, Dec. 1843, from *Giornale per servire ai progressi*.

OPHTHALMOLOGY.

56. *Chloride of Sodium in diseases of the Eye.*—In a report (see No. for Aug. 1840) of cases treated in Wills' Hospital by the editor of this journal, he recommends in certain conditions of the conjunctiva, as a useful application, a saturated solution of common table salt. This remedy has since been employed by others, and with favourable results.

M. TAVIGNOT has recently made extensive use of this substance, as a local application, in different forms of inflammation of the eye, and more particularly, in ulcerations of the cornea, and recommends it as being not only as efficacious, but even more so than nitrate of silver, and other substances commonly applied in such cases. At the same time, it is less likely to produce permanent irritation, or act as an escharotic. He has employed it, 1st, In the *solid* form. The crystals of common salt are ill adapted for this purpose, from their want of cohesion; but with a little practice a piece may be obtained capable of being filled into a caustic-holder, and used in the same manner. Another way of applying the substance, is in the form of a fine powder introduced into the eye; its action will then become prolonged, and as a consequence, be more energetic. This, however, might be an advantage in various cases, not readily yielding to other modes of treatment, as for example, purulent ophthalmia. As compared with the nitrate of silver, or sulphate of copper, the use of the chloride of sodium in the solid form, is preferable, because there is no danger, as with these substances, of its destroying the tissues, its action being merely irritant. The application of chloride of sodium causes pretty smart pain at the instant, but this soon subsides. 2d, In the form of *ointment*. This may be made in the proportions of from 1 to 4 drachms of powdered common salt, to the ounce of lard. It is best to begin with the weakest form, and afterwards gradually to augment its strength. In granular conjunctivitis, and inflammation of the ciliary margins,—affections, it is well known, of a very obstinate character,—it has been of signal benefit. 3d, As a *collyrium*. This is the best form of using the application. Several cases are given of its success in ophthalmia, and ulcerations of the cornea. The strength of the solution may vary from 1 to 3 drachms to the ounce of water. One drachm to the ounce will be found sufficiently strong for most slight cases. —*L'Experience*, Dec. 1843.

57. *Cyanide of Zinc in Ulcers and Opacities of the Cornea.* M. CABRIER is of opinion that preparations of hydrocyanic acid have great efficacy in promoting cicatrization of ulcers of the cornea and the removal of opacities. The compound he prefers is the cyanide of zinc, in the form of ointment, in the proportion of 1 part of the salt to 25 of lard. —*Bouchardat's Annuaire de Thérapeutique*, 1844.

58. *Conical Cornea.*—DR. JAMES H. PICKFORD relates, in the *Dublin Journal of Med. Sci.*, some cases of conical cornea successfully treated by the administration of an emeto-purgative, at first daily, and then once or twice a week. He uses the sulphate of zinc with sulphate of magnesia.

The efficacy of this treatment we conceive needs confirmation.

MIDWIFERY.

59. *Signs of Pregnancy.*—The changes in the condition of the os and cervix uteri during pregnancy have been investigated by MM. Filugelli, Chailly, and Cazeaux. The results they have arrived at agree on the whole with those of Birnbaum. M. Filugelli, indeed, appears to have fallen into the error of ima-

gining that the cervix uteri becomes actually elongated in the course of pregnancy; and M. Chailly's paper is principally occupied with a refutation of this opinion; the slight enlargement which may possibly result from tumefaction of the cervix at an early period of pregnancy being in his opinion too slight to be appreciated. M. Cazeaux's conclusions are: 1. That a softening of the texture of the cervix uteri takes place from the very beginning of pregnancy, being for the first few months confined to its lower part, but extending from below upwards, and taking place less rapidly and in a less marked degree in primiparæ than in those who have already borne children. 2. While this softening goes on, the cervix dilates; presenting in those who have had children the form of a funnel with its base downwards, while in primiparæ it is more spindle-shaped. 3. The os uteri is closed in primiparæ, until the end of pregnancy; in women who have borne children it is widely open, forming the base of the funnel. 4. As a general rule, no real shortening of the cervix takes place until about the last fortnight of utero-gestation.—*West's Report*, in *B. & F. Med. Rev.*, April, 1844.

60. *Watery discharge from the Vagina during Pregnancy*.—M. CHAILLY in a paper on *watery discharge from the vagina during pregnancy*, adopts the opinion of Naegele, that the fluid is secreted by the uterus, and not in any way derived from the ovum. The fluid, as it is accumulated, detaches the membranes from the walls of the uterus, and a pouch is thus formed in which it is contained until reaction of the uterus is excited. The contractions of the uterus, however, detach the membranes partially from the cervix; and the fluid escapes in gushes through this aperture, an occurrence that is sometimes painless, sometimes attended with pain about the loins and pelvis. Several cases are related to prove that the uterus, and not the ovum, is the source of this fluid. Thus, a woman in the eighth month of pregnancy suddenly discharged two quarts of reddish fluid from the vagina; and though no sign whatever existed of commencing labour, a similar discharge continued for six days. At the full period labour came on, and it was found necessary to rupture the membranes artificially, when a large quantity of perfectly limpid liquor amnii escaped.—*Ibid.*

61. *Ulceration of the Cervix Uteri*.—DR. CORTILHES calls attention to the frequent complication of pregnancy with *ulceration of the cervix uteri*. These ulcerations are frequently caused by the previous occurrence of abortion, and in many instances exist before the commencement of pregnancy. The symptoms to which they give rise, however, may be so slight as not to attract notice while the patient is unimpregnated, though on the occurrence of pregnancy they generally become very marked; while utero-gestation renders the ulcers very indisposed to heal, or even prevents their cicatrization. The ulcerations are always associated with engorgement of the cervix uteri, which is more considerable in the early months of pregnancy, than at a later period, and they invariably give rise to pain in the lower part of the abdomen. They are usually of an irregularly circular form, four or five lines in diameter, and one or two deep, and have a fungous surface covered with dark red, almost violet-coloured granulations. The ulceration usually begins around the edge of the os uteri and thence extends, giving rise to a thick, yellowish white discharge. Should the disease occur in the earlier months of pregnancy, the ulcerations will often advance, though very slowly, towards cicatrization, and utero-gestation continues undisturbed. When the ulceration supervenes at a later period, no attempt is made at cicatrization, and premature labour comes on unless the woman be subjected to proper treatment. This tendency of the disease to induce premature labour constitutes its gravity; but M. Cortilhes regards it as very amenable to treatment which consists in the local employment of caustics and the use of astringent injections.—*Ibid.*

62. *Pelvis deformed by Osteomalatia—yielding during Labour*.—DR. SPENGLER in a dissertation written under the auspices of Professor Naegele, describes two cases, neither of which, however, came under his own observation, in which the

pelvis deformed by osteomalacia yielded so as to admit the passage of the child during labour.—*Ibid.*

63. *Malposition of the Uterus as an impediment to Labour.*—Dr. PERFETTI attended a woman in labour who had complete procidentia of the uterus. She had suffered more or less from prolapsus uteri ever since she was fifteen years old, and on any great exertion the organ appeared externally. Having become pregnant at the age of twenty-two, she was relieved from her ailment until the seventh month of utero-gestation, when it began to return; at the beginning of the eighth month the uterus reached more than six fingers' breadth beyond the external parts, and during labour it projected still further. After being four days in labour, Dr. Perfetti visited her, and found the os uteri so hard and undilatable as to require incisions to be made into it. He then introduced the forceps into the uterus, and extracted the child. The mother recovered, but the prolapsus of the uterus rendered it necessary for her to wear a pessary. Dr. J. Ledesma, of Salamanca, has recorded the history of a woman, aged forty-two, the mother of six children, who was affected with inguinal hernia on the right side. In the third month of her seventh pregnancy the hernial swelling suddenly increased in size; and continued progressively to enlarge up to the period of labour, utero-gestation being undisturbed by this accident. When labour began, the hernial tumour measured twenty-four inches in length, and twenty-six in circumference at its broadest part; its base reached to the crural arch, and its weight had drawn the right labium considerably downwards. When labour-pains came on, which were attended with a slight discharge of liquor amnii from the vagina, an incision was made into the tumour, and a living female child, twenty-two inches in length, was extracted. The patient would not submit to the division of the adhesions by which the uterus was confined to its abnormal position, and consequently the hernia was not reduced. In forty days from the date of the operation, the patient was sufficiently well to attend to her household duties. [This case is very similar to that which recently occurred to Dr. Fischer, of Berne, mention of which is found in many of the English journals, except that Dr. Fischer's patient died. References to other similar cases will be found in Busch, *Geschlechtsleben des Weibes*, iii Band, Seite 647.]—*Ibid.*

64. *Rupture of the Uterus terminating favourably.*—Four cases of this have lately been recorded in which the patients recovered.* Dr. Mitchell's patient was thirty-eight years old, and the mother of six children. From the sixth month of pregnancy she had suffered very severe pain at the lower part of the abdomen. Labour proceeded favourably for the first twelve hours, when sudden collapse and vomiting occurred. The patient was delivered by the crotchet, and it was then found that a rupture existed at the anterior part of the cervix uteri. Extreme irritability of the stomach, and very intractable diarrhœa were the most prominent symptoms that followed her delivery. Opium was given in large and frequently repeated doses, both by the mouth and enemata, and on the thirty-first day after her delivery, she was sufficiently recovered to be removed to her own home. M. Castelly performed gastrotomy on his patient three hours after the rupture of the uterus had occurred, and extracted the placenta, as well as the child, through the wound. Severe metro-peritonitis followed the operation, but the patient ultimately recovered. Six months afterwards she menstruated; and nine months afterwards aborted at the third month. The accident to Dr. Vaulpré's patient appears to have been produced by repeated unsuccessful attempts to deliver with the long forceps. Dr. Van Cauwenberge's patient had undergone the Cæsarian section fourteen months before. When in the seventh month of pregnancy labour-pains came on; symptoms of ruptured uterus occurred, and the child passed into the abdominal cavity. The exhausted condi-

* Dr. Mitchell, *Dublin Journal of Med. Science*, Jan. 1843. M. Castelly, *Bull. de l'Acad. Roy. de Méd.* Sept. 30, 1843. D. Vaulpré, *Gaz. Méd. Mars* 18, 1843. Dr. V. Cauwenberge, *l'Expérience*, Nov. 18, 1843.

tion of the woman appeared to forbid all interference, but between the fifteenth and twentieth day after the accident happened, the cicatrix of the abdominal integuments gave way, and a putrefied fœtus, with its appendages, was extruded. M. Danyau recommends that the suture should be applied in cases of laceration of the perineum, immediately on the occurrence of the accident, instead of waiting till the patient has recovered from her labour, when it would be necessary to refresh the edges of the wound before applying the suture. The authority of M. Roux is directly opposed to M. Danyau's plan; but M. Danyau asserts that the degree of tumefaction which follows a rent of the perineum has been exaggerated, whilst the suture tends to diminish it, and if proper attention be paid to the introduction of the catheter, and the frequent use of vaginal injections, neither the lochiæ nor the urine will seriously interfere with the healing of the wound. On the other hand, if the operation be delayed, it becomes almost impossible to bring the edges of the wound into contact. In support of his opinion he relates six cases; in five of which the perineum was torn up to, but not into the sphincter, and the operation was successful; in the sixth, the sphincter too was involved, and there was considerable ecchymosis about the edges of the wound. The operation, in this instance, failed, sloughing of the parts having taken place on the fourth day after delivery.—*Ibid.*

65. *Turning in Arm Presentations.*—DR. HUTTER, of Marburg, has written a lengthy paper, in which he recommends turning to be practised without rupturing the membranes, in some cases of arm presentation. The operation is much the same as that practised by Michaelis, when prolapsus of the cord occurs, and consists in the introduction of the hand between the uterus and the membranes, until the operator reaches the feet, knee, or other part, when, without rupturing the membranes, it will be extremely easy to turn the child. He practised this manœuvre in five cases, but in three the same person was the subject of the operation. In four of the five cases the child was saved, and in one instance the mother had previously lost two children by the ordinary mode of turning. He recommends this practice as disturbing the ordinary course of labour much less than the usual mode of turning, since the rupture of the membranes is left to nature, and the case may be afterwards managed as if the presentation had been natural from the beginning. The whole quantity of the liquor amnii being available in this operation, its performance is greatly simplified, while it has the further advantage of avoiding the prolapse of the cord, or of admitting of its reposition, should that accident have occurred. He denies that the uterus would be much irritated by this proceeding, and asserts that the membranes would be stretched, and forcibly separated from the uterus, or the placenta partially detached, only, if the operation were attempted before the os uteri is sufficiently dilated, or if the membranes were morbidly adherent, while auscultation would always be an adequate guide to the situation of the placenta. [These arguments do not appear by any means conclusive; the various favourable circumstances which, according to Dr. Hütter, warrant the operation, are not found often to coincide, and the hazard of detaching the placenta is probably much greater than he represents it to be. His assertion, too, that auscultation would invariably guide to the situation of the placenta is incorrect, for in one hundred and eighty out of six hundred cases, in which it was resorted to by Nægele, or in thirty per cent., it was not possible to determine the seat of the placenta.]—*Ibid.*

66. *Partus siccus.*—A case of this is detailed by M. MATTHYSEN, in which the patient was delivered of her first child after a quick labour, but in which no discharge of liquor amnii either preceded or followed its birth. The placenta came away naturally, the uterus contracted well, and though the lochiæ were exceedingly scanty, no accident occurred in the puerperal state. The child was born alive, full grown, but extremely thin, and its skin was covered by a thick coating of vernix caseosa. [M. Matthysen erroneously supposes this to be the only case of the kind on record; instead of which many cases have been related since attention was first called to it by Rudolphi.]—*Ibid.*

67. *Abuse of Obstetric Manœuvres.*—MM. PEREIRA and LASSERRE, formerly internes at the Maternité, have published an essay on the abuse of various obstetric manœuvres, the accidents to which they give rise, and the advantages of temporizing in the practice of midwifery. Many cases are related, illustrative of the evil consequences of forcible dilatation of the cervix uteri, and of the application of the forceps, with no other indication than the slowness of the labour. In this last category there are related several cases of laceration of the vagina, and rupture of the uterus, and the remarks of the writers on these accidents form the most valuable part of the paper. They next endeavour to show, by the evidence of statistics, that the danger to the mother's life, from the mere prolongation of labour, is less than the danger to which she is exposed when the labour is terminated by manual or instrumental interference.—*Ibid.*

68. *New Perforator.*—Dr. SMITH,* of Glasgow, has invented a new perforator; the blades of which expand, by means of a screw, much in the same way as the blades are separated in Weiss's speculum. He conceives that by this modification some of the dangers incidental to the employment of the ordinary perforator are avoided. Various attempts have been made to improve Baudelocque's cephalotribe; many of these devices display much ingenuity, but at the same time add greatly to the complication of this formidable and, it may, perhaps, be added, useless and dangerous instrument.—*Ibid.*

69. *Complete Congenital Inversion of the Uterus.*—M. WILLIAUME, of Metz, communicated to the French Academy of Medicine, Sept. 12, 1843, a case of a very peculiar disposition of the uterus; this organ was inverted, so that the body of the uterus was below and formed a tumour on the right side of the vagina, while its neck was above and completely out of reach of the finger. On examining the hypogastrium, or through the rectum, no trace could be detected of the womb in the situation it usually occupies. This disposition of the parts is congenital; the girl in whom it occurs is a virgin accustomed to a sedentary life, and has never made any exertion which could have occasioned it. She menstruates regularly, which excludes the idea of occlusion, but the menstrual discharge finds exit with difficulty, and imperfectly, and at the period of the catamenia, accumulates in part in the uterus, and distends it, so that a certain pressure must be exerted on the organ to empty it entirely and restore it to its natural size. The menstrual blood is always mixed with a copious leucorrhœal discharge. A consultation of physicians was held at Metz, and, considering that the affection was congenital, and the uterus so immovable that no effort could remove it from its abnormal situation, it was determined that marriage should be interdicted, because conception might take place, but delivery would be apparently impossible.—*Dub. Med. Press*, Nov. 8, 1843.

MEDICAL JURISPRUDENCE AND TOXICOLOGY.

70. *Death from Corrosive Sublimate applied to an Excoriated Surface.*—A child two years old, had, at the bottom of the cutaneous folds of the thigh, several small chaps. The mother was in the habit of sprinkling the denuded surface with the powder of cycpodium. One day, by mistake, she took from the cupboard, a nearly similar powder, yellowish like it, but hard to the touch, and which afterwards was ascertained to be impure *corrosive sublimate*. She used it to powder the upper part of the thigh and scrotum. Piercing cries followed, and in twenty minutes a brown scar was formed on the parts that had been powdered. Around was an inflammation of a bright red colour.

A physician caused the child to be bathed two or three times, and thirty hours after the accident it was taken to the hospital. The scar was now black and

* London and Edinburgh Monthly Journal, Nov. 1842.

dry in the centre and rather humid at the circumference. The child showed no functional disturbance, but at the end of forty-eight hours the gums swelled, became painful, and were covered with white pellicles; the breath became fetid, and the submaxillary glands swelled considerably. Gradually the inflammation extended over the whole mucous membrane of the mouth, scars showed themselves on the gums and on the internal surface of the cheeks; beneath them the flesh was fungoid and bloody. Afterwards the jaw-bone was denuded, and considerable hemorrhage ensued. The blood swallowed by the child was passed under the form of a blackish liquid, once by vomiting, and once by stool. The breath was extremely fetid, and the salivation well characterized. Fever set up only after seven days; the face altered but little before death, when the flesh became flabby, and the skin assumed a dull and grayish colour.—*Chemist*, February, 1844, from *Gazette des Hôpitaux*.

71. *Diseases of the Uterus compatible with Pregnancy*.—I have, in another place, endeavoured to show that the study of Medical Jurisprudence, apart from its value in aiding the just administration of the laws, has a secondary advantage, viz., that it establishes, from time to time, the correctness or incorrectness of medical opinions on doubtful points, by bringing all the knowledge, either of facts or of functions that we possess, to bear at once on a particular inquiry. I adduce, in illustration of this, the subject at the head of this article. When I commenced the examination of the science, cancer of the uterus was placed by Foderé, the then principal authority, among the absolute causes of sterility, and I observe that he quotes the name of Morgagni in support of it. With the progress of investigation, this has been ascertained to be an incorrect opinion. Dr. Beatty, of Dublin, had a pregnant female labouring under the disease, and Dr. F. H. Ramsbotham observes, in his lectures, (*London Medical Gazette*, vol. 16,) that in one case, at least, which he attended, he had an opportunity of knowing that the disease existed before impregnation. Dr. Waller (*Lancet*, February 29, 1840,) mentions an instance where the female passed safely through her delivery, but died after intense suffering, in six weeks thereafter. The uterus was completely destroyed by ulceration.

Dr. Lever, in his late work on Organic Diseases of the Uterus, mentions six additional cases. Abortion is, however, a common occurrence. "In two of the six it would seem that the fœtus was small and under the standard size, in a third it was dead, (although the woman conceived subsequently, and gave birth to a living seven months' child,) and in a fourth it must have been dead for some time before delivery, for the cuticle was peeling off in several parts."

The following facts are also stated by Dr. Lever. "Eighty-one women, labouring under organic uterine disease, conceived 553 times; 43 conceptions terminated in abortions, and 510 children were born at the full time. Of these 510 children, twelve only were still-born. Subsequently he witnesses three other cases in which the infants were still-born, in all of which the mother laboured under encephaloid cancer. In these the death of the child was clearly traced to the protracted labour, and consequent pressure on the head, owing to the non-dilatability of the parts through which the child had to pass."—*From Review of Dr. Lever's Work in Medico-Chirurgical Review, and Edinburgh Medical and Surgical Journal for January, 1844.*

T. R. B.

72. *Action of Alcohol and Ether on the Animal System*.—Mitscherlich has instituted several experiments with these substances, and the following are the results, as given by Dr. Simon in his Medical Chemistry.

Anhydrous alcohol (*absolute alcohol*, or alcohol absolutely free from water) was the article used. Rabbits, into whose stomachs one ounce of anhydrous alcohol had been injected, fell in a short time into a state of great faintness; sensation and motion were diminished, so that the animals could no longer keep themselves upright; the pulse and respiration were very much hurried, and death followed from one hour and a half to two hours without any convulsions. On examination, immediately after death, the alcoholic odour was palpable, the

muscles still contracted when mechanically irritated, the peristaltic motion of the intestinal canal was weak, the stomach was found to be very much inflamed, the colour of the small intestine was not changed, the gastric contents smelt strongly of alcohol, and were partly coagulated. "The chemical action of alcohol on the coats of the stomach was placed beyond all doubt; the epithelium was detached only in some places; it was of a gray-white colour, easily torn, the form of its cells were changed, and they appeared, as it were, shrivelled up. The vascular membrane was of a dark-red brown, full of blood, and penetrated with a partly clear or reddish-coloured exudation, whereby it was increased in thickness, but the exudation itself was not coagulated; the muscular and peritoneal coats were not much altered, the small intestine was little changed; the large intestine, the lungs, heart, kidneys, and liver, were in their natural state; the brain and vessels of the cerebral membrane were not very much filled with blood, nor was any exudation perceptible; the blood did not appear in any way changed, nor could the odour of alcohol be detected. *Dilute alcoholic fluids produce no chemical change in the coats of the stomach, but in the case of persons of temperate habits, chemical reactions are to be apprehended from the immoderate use of a fluid containing forty per cent. of brandy.*"

Ether does not appear to exercise a chemical action on organic matters. A drachm of it was injected into the stomach of a rabbit. The animal seemed but little excited by it, but became very soon insensible, and fell on its side; the body became tympanitic, and after fourteen minutes death followed without spasms; on opening the body the smell of the ether was very perceptible, the stomach and small intestine were much inflamed, but the cells of the gastric mucous membrane did not differ much from their natural state; in some cases, where the mucous membrane was covered with blood, the epithelial cells were swollen to about six or eight times their natural size; the vascular membrane was much injected, the muscular and peritoneal coats were not changed; the small intestine was inflamed, and contained much ether. If, in cases where large doses of ether were given, death followed very soon, the intestinal canal was not changed. Sometimes the animals die of suffocation amid the rapid evaporation of the ether. The ether accordingly occasions violent inflammation of the stomach and intestinal canal; it penetrates the membranes, and is then conveyed into the blood-vessels. A chemical action on the tissues could not be perceived.—*Medico-Chirurg. Rev.*, January, 1844.

73. *Poisoning of Children by coloured Confectionary and Paints.*—The French and German journals frequently contain accounts of fatal accidents from the above causes, and I doubt whether sufficient attention is paid to the subject in this country.

Dr. BEER, of Vienna, was called to five children, aged from three to eleven years, who had eaten of those coloured *bonbons*, of which sugar is the principal constituent. Some were seized immediately after eating, others a few hours afterwards. The symptoms were great thirst, headache, vertigo, nausea, dryness of the mouth, vomiting of a dark brown or green matter, severe pain in the bowels and tenderness to the touch, retention of urine, obstinate constipation, with constant tenesmus, and cold sweats. These were succeeded by violent pains in the head, light delirium, spasms and somnolency, which last, in three instances, was followed by coma. In a patient eleven years old, diarrhœa occurred, and in another a vomiting of mucus and blood.

All, however, recovered by the antiphlogistic treatment and external stimulant applications, but a difficulty in passing urine continued for several days in two of them. On examination, by a competent chemist, these *sugar meats* were found to contain a notable proportion of oxyde of copper. (*Oesterr. Med. Wochenschrift.*)

As to cakes of paint, Dr. LEWENSTEN, of Berlin, witnessed the poisoning of a child from biting one of green ink, and which, when analyzed, proved to be composed of arsenite of copper.

Another child in Paris amused itself by attempting to make pictures with the colours in a paint-box, and, as is quite common, effected this by moistening the end of the cake in its mouth. It was shortly after seized with all the symptoms of poisoning, from which it was relieved by early remedies. The parents, desirous of ascertaining the cause, requested M. Regnard to examine the paints. He ascertained that the one used by the child, which was of a dark green, consisted of cyanuret of iron and chromate of lead; two others consisted of arsenite of copper.

Mr. Regnard adds that the yellow paints are thus coloured by gamboge or chromate of lead; the red with cinnabar, or the red oxyde of lead; the white with white lead; the blue with carbonate of copper, while the green are coloured, as above stated, with arsenite of copper, (Scheele's green,) or a mixture of Prussian blue and chromate of lead.

Moral.—Never permit young children, or even those of a larger growth, to use water-colour paints away from the eye of the parent or nurse.—*Encyclographie Des Sciences Médicales*, Aug. and Oct., 1843. T. R. B.

74. *Toxicological Experiments with Nitrate of Potash.* Academy of Sciences, Paris, July 31, 1843.—MM. MOJON and ROGNETTA made a report of their experiments on rabbits with this substance, for the purpose of elucidating the following points.

1. Is it true that nitrate of potash is not absorbed by the skin, as Orfila and other toxicologists assert? Our experiments have given us directly opposite results. We have poisoned rabbits by injecting a solution of the salt into the subcutaneous cellular tissue. A full grown rabbit died in six hours after thus injecting 240 grains of nitrate of potash dissolved in $3\frac{1}{4}$ ounces of water.

2. When introduced into the stomach, what is the *minimum* mortal dose to a rabbit? Forty grains, dissolved in three and a quarter ounces of water, and injected into the stomach, killed rabbits in from thirty to forty hours. Twenty and even thirty grains did not destroy them, but death followed in from four to five hours, when sixty grains were injected.

On dissection, in these cases, not the slightest mark of inflammation or erosion in the stomach, intestines, or kidneys, could be found. On the contrary, these parts were all pale and remarkably flaccid. The abdominal veins were alone gorged with blood.

The most remarkable symptom attendant on these poisonings, was the extraordinary secretion of urine. It commenced almost immediately after the injection of the salt, and continued until a very few hours before death.

3. Are there any antidotes to nitrate of potash? We regard its action as asthenic or debilitating, and hence believe that a stimulant treatment is best calculated to counteract its effects. We dissolved forty grains in about three and a quarter ounces of light wine, and injected the mixture into the stomach. In all cases the animal survived the experiment; we hence conclude that the stimulant effect of alcohol will neutralize the poisonous qualities of nitrate of potash.

Dr. Henry Bennet asserts that nitrate of potash may be safely given in large doses; (see p. 210, of this No.)

He coincides in opinion with Mojon and Rognetta as to its sedative effects. This, indeed, is shown by the experiments of Orfila on animals.

It is quite probable that the escape of individuals, after taking large quantities of saltpetre, may be susceptible of the above explanation. But may not the disease present have some effect, like pneumonia on tartar emetic? T. R. B.

75. *On Poisoning by Copper.* By MM. DANGER and FLANDIN.—The following process has enabled the experimenters to detect the hundred-thousandth part of this metal mixed with organic matters. Carbonize the animal matters with one-third of their weight of sulphuric acid, and carry this process to a low red heat. Reduce the charcoal thus obtained to powder, add sulphuric acid sufficient to moisten it, and then boil the mixture, but not to dryness. If now

a solution be made in water, all the tests characteristic of copper may be used, with the certainty of a correct result.

They totally dissent from the opinion that either copper or lead exists in the human body in its healthy condition. They are confirmed in this by direct analysis, and also by a physiological experiment.

During the nine months that they were engaged in their investigations on this metal, they mixed daily, with the food of a dog, sometimes sulphate and sometimes acetate of copper. The dose was gradually increased, and the animal finally took, without any injury to his health, ten centigrammes daily, so that the whole swallowed, during 263 days, was not less than twenty-five grammes, (about seven drachms.) During life no trace of copper could be detected in the urine, and when killed none was found either in the bones, muscles, or viscera.

Our authors also claim to have discovered a peculiar symptom, viz., salivation or a copious bronchial secretion, which ordinarily occurs in a few hours after the poisoning, and which is evidently the mode in which the system frees itself, in the same manner as the kidneys eliminate arsenic and antimony. They detected the poison in this fluid, after having in vain long sought for it in the urine. When the secretion ceased, the animal swallowed, with its saliva, the fluid of the bronchial respiration, and then they detected the copper in the intestinal excretions.

This difference in the mode in which nature acts to expel the poison, leads MM. Danger and Flandin to suggest various modifications in the treatment of cases of poisoning by copper. Commence with chemical neutralizers, as iron filings, sulphuric lemonade, and emeto-cathartics; then general and diffusible stimulants, sudorifics and vapour baths, and finally, employ the remedies indicated to remove local inflammation.

As to other poisons, chloride of gold passes off in much larger quantity by the kidneys than by the lungs; while it is directly the opposite with chloride of silver. Of the poisons that pass most readily by the kidneys, antimony has the first place, next gold, arsenic, silver. Copper is certainly at the foot of the list, and they doubt whether it should not be altogether excluded, since the organs of the renal secretion appear to be impenetrable to it.

After death, it is exclusively in the intestinal canal and the liver that we can detect the presence of copper. From an ounce and a half to two ounces of the latter viscus, contain sufficient for the most decisive judicial proofs.—*Royal Academy of Sciences of Paris*, Meeting of July 24, 1843. T. R. B.

76. *Medico-legal Observations on Foot Prints*.—M. Mascart presented a paper on this curious subject to the Royal Academy of Medicine of Belgium. We gather the following as to its contents from the report of M. Delahaye. Inquiries on this point have usually been left to magistrates, although it is strictly a subject (but neglected) belonging to the medical jurist.

After some remarks on the conformation of the plantar surface, covered either with a shoe or boot, and on the mechanism of walking in man, and the application of the foot to the ground, M. Mascart asserts that, owing to various causes, the foot-print on the ground is generally smaller than the foot which has made it. If this be so, many serious errors must have been made formerly, since the prevailing opinion is, that they should exactly correspond.

The author ascribes this shortening principally to one of three causes: the consistence of the soil to which the foot is applied, the shape of the foot, or of the boot or shoe covering it, or lastly, the manner in which the foot was placed in walking. He enters into details, satisfactorily illustrating all of these.

He allows, however, that this result is not invariable, and this may occur from the peculiar shape of the shoe, boot, or slipper, or from the depth to which the foot has gone. The reporter suggests that there may be instances in which the foot-print will be even larger than the foot itself. Thus, when walking on a light soil, the point of the foot in its forward motion may throw before it so much of the ground as to enlarge the front of the point. The foot, in walking, is not applied perpendicularly, but from behind, forwards or downwards. Hence, a

certain quantity of the ground is carried along with it, and, on measuring the mark, it has, under such circumstances, been ascertained, to be some lines longer than the sole of the boot.

M. Mascart is continuing his investigations of this subject.—*Bulletin de l'Académie Royale de Médecine de Belge*, November, 1843.

77. *Chossat on Starvation*.—The experimental researches of this author obtained for him the gold medal for Experimental Physiology in 1841, from the Royal Academy of Sciences of Paris. His *Memoirs*, published in 1843, contains numerous facts and important inferences bearing on physiology, pathology, and therapeutics. I shall, however, confine myself to those which immediately concern the subject of legal medicine.

M. Chossat's experiments were made on pigeons, turtle-doves, common fowls, guinea pigs, rabbits, and several of the cold-blooded animals, as frogs, tortoises, serpents, &c.

Forty-eight warm-blooded animals of all the species were totally deprived of food and drink, and the first important point ascertained was the constant but gradual diminution of weight. If the loss of the first day be abstracted, the loss of weight till towards the close of life was nearly the same each day. The first day always exhibited a greater amount of loss, in consequence of the bowels evacuating the remains of the last food. All things being otherwise equal, and taking a period equally distant from the hour at which inanition began, the loss was great in proportion to the bulk of the body. Towards the end of life, an increased amount of diurnal loss in weight was observed—a circumstance attributable to the increased amount of alvine evacuations, or even smart diarrhœa, which often then occurred.

One of the most interesting points ascertained by M. Chossat was the absolute average amount of weight lost before death took place. The average result of all his experiments, whether with fat or lean animals, showed that before death ensued the weight of the body was reduced four-tenths of what it had been when they were shut up to be starved. And when this occurs death ensues. But it may be modified by circumstances. Thus, if the animal be loaded with fat, it sometimes lives till it has lost five-tenths, or one-half, of its weight. Age, also, exerts a powerful modifying influence. Very young animals often die after losing only two-tenths of their weight, and the loss in them never exceeds four-tenths.

The time which an animal, deprived of all sustenance, will live, varies much. In birds and mammalia, the average duration of life under starvation was nine days. The maximum, however, was twenty days and a half, and the minimum was a little more than two days. Here, again, age exerted a powerful modifying influence. In very young animals death occurred by the end of the second day, while, in adult animals, the average duration of life was from fifteen to eighteen days. It is, however, a remarkable circumstance that the longer life was prolonged, or to be prolonged, the less was the amount of daily loss, and the sooner death occurred, the more rapid was the diurnal loss of weight.

In the case of reptiles and fishes, the experiments proved that they died when they had lost the same proportional amount of weight as the birds and quadrupeds. They lived, however, much longer, as their nutritive movement is much slower. In general, they lived twenty-three times as long again.

The next series of experiments, undertaken by M. Chossat, was conducted on the principle of allowing a very insufficient quantity of food. For some animals there was given a very limited supply of both food and drink; to others, insufficient solid food alone; and to a third, water only.

In the first series it was singular to remark, that, when they died, their loss of weight was found to be very nearly the same as if they had been totally deprived of food. The duration of life was, however, nearly double.

A supply of water seemed to prolong life in reptiles, and somewhat lengthened it in quadrupeds, but had no influence on that of birds. The water, how-

ever, must be voluntarily taken, since, if forced to swallow a quantity equal to their daily loss of weight, their lives were shortened.

As animals killed by starvation thus lose four-tenths of their weight, it became a matter of importance to ascertain what organs of the body had been chiefly attacked to supply this loss. The fat of course first disappears, but this is not an essential organ. It is the muscular system, and the heart in particular, which bears almost the whole loss. Hence, a softened state of the muscular system. The nervous system appeared to have lost none of its original volume or weight, though every other organ of the body was reduced both in volume or weight.

The animal heat falls rapidly in animals that are starved, and death occurs in warm-blooded animals when the temperature falls as low as 76° 81° Fahrenheit. This is the temperature at which animals die which are plunged in refrigerant mixtures, and we may, therefore, infer that death ensues in consequence of the cooling of the body below what is sufficient for the purpose of life.

Symptoms of Starvation.—The animal remains calm from the beginning of the experiment till the half of the period which they live, or nearly the whole period is expired. After this, they become more or less agitated; and this state continues as long as the animal heat keeps tolerably high. On the last day, they fall into a state of stupor, attended with a rapidly increasing weakness. The animal shakes when it stands, and seems giddy; the feet are cold and livid, and contracted like a ball. The respiration becomes more and more feeble and slow; the sensibility diminishes; the pupil of the eye dilates, and the animal dies, sometimes tranquilly, sometimes after a few spasms, or convulsive movements of the wings, or opisthotonos of the body.

The feculent discharges were, as already stated, copious on the first day, being the remains of the food previously taken, but were small in quantity afterwards. During the last three days of life, however, they augmented in quantity, and presented the appearance of colliquative diarrhœa. The weight of these feculent discharges, was intimately connected with the diurnal loss of weight, and with the exception of the age, nothing appeared to possess a greater influence on the probable duration of life than the nature and quantity of this discharge; the duration of life and the quantity evacuated were always in the inverse ratio of one another.

The cerebral functions seem to remain entire till towards the end of life.

As M. Chossat's experiments led him to conclude that death eventually occurs from the cooling of the body below what is necessary for life, he was also induced to inquire whether an animal, just expiring, could be brought back to life and strength, if it were plunged into an elevated temperature. The result was a favourable one. When placed in a heated stove, the animals gradually, but slowly revived. The appetite returned, but digestion did not take place unless the temperature was kept up at its elevated point. This last, however, gradually regained its power, and thus the natural animal heat was restored. There were, however, exceptions to this, the animal dying, notwithstanding his partial recovery, after successive attacks of convulsions.—*Condensed from the Edin. Med. and Surg. Journ.*, No. 158, and *Annales D'Hygiène*, No. 60.

T. R. B.

78. *Sudden death from a Mechanical Cause.*—The following case is valuable as showing the necessity of a medico-legal investigation in every instance of sudden death.

Dr. Jackson, of Leith, was sent for at 3 A.M., to visit a person who was said to be either dead or in a fit. He found him dead. The countenance was pale, with a haggard expression, and the pupils were dilated. On looking into the mouth, a small quantity of matter, evidently ejected from the stomach, was seen lying on the tongue.

The deceased had been very intemperate. He had dined the day previous, on boiled potatoes, with broth, and in the afternoon, drank a quantity of over-proof spirits, and which indeed was considered to be the cause of his death. In

the evening, he was brought home very drunk. He vomited a good deal, and was put to bed by his brothers and mother. The latter awakening during the night, rose to see how he was, and found him in such a state as to send for the physician.

Dr. Jackson was naturally led to suppose that either excessive intoxication, or apoplexy had been the cause of this sudden death. And on examination, the brain was found congested—so also the lungs—while the left side of the heart was contracted and empty, and its right dilated and full of dark fluid blood. There was, however, no marked cause for these appearances yet observed, until he proceeded to open the trachea. Here a piece of potato skin was found, entangled between the folds of the thyro-arytenoid ligaments and completely closing the *rima glottidis*. It had evidently acted as a valve, and thus caused suffocation.

This substance was probably brought up in the act of vomiting, and being of a light nature, was drawn into its present position, from which the deceased was not able, in consequence of his deep intoxication, to cough it up.

Dr. Jackson justly observes, that if the person had been found dead in a house of ill fame, or had been previously quarrelling, suspicion might unjustly have fallen on innocent individuals.—*Edin. Med. and Surg. Journ.*, April, 1844.

T. R. B.

79. *Corpora Lutea*.—The Edinburgh Medical and Surgical Journal, after analyzing the observations of M. Raciborski on the *periodical deposition of ova, by women' and the females of the mammalia*, thus sums up their results, and which, if correct, settles a question of very great magnitude in forensic medicine. "They (the cases given) fully bear out M. Raciborski in the view he had adopted, viz., that in uniparous animals one ovum, and in multiparous animals several ova, are developed every time the animal comes into heat, and are thrown off independently altogether of the animal having access to the male; that the same occurs in women, every time they menstruate; that Graafian vesicles, therefore, are to be found in the ovary, whenever the animal is at the rutting season, or when women are menstruating, and that *corpora lutea* follow the bursting of the vesicles in every case. *Neither the presence of corpora lutea, nor of Graafian vesicles in the ovaries, are therefore any proof of the loss of virginity, or of a female having had access to the male. Nothing but the presence of a fecundated ovum in the uterus can prove this.*"—*Ibid*.

80. *Medico-legal Inquiry into the Diagnostic character of Ecchymoses*. By Dr. HENRY BAYARD. (*Annales D'Hygiène*, October, 1843.) In a long and valuable paper, Dr. Bayard, by an extensive reference to facts, endeavours to point out the distinguishing or diagnostic characters of the different kinds of ecchymoses or effusions of blood which occur in the human body—as well those which result from injuries (blows or poisons) as those arising from the state of the system. His conclusions, in which the characters of the one form are contrasted with those of the other, are as follows.

Traumatic ecchymoses, 1. Are the result of external causes. 2. They have at times a considerable extent, but generally exist in only one place. 3. Tumefaction, more or less apparent, often elastic and presenting a shining appearance, attends them, and a change in the colouration of the part soon takes place. At first the colour is livid or lead coloured, but it becomes violet or reddish. 4. In these ecchymoses the colouration is most intense at the centre. 5. The temperature of the part is above that of the surrounding surface. 6. The blood generally coagulates, but when effused in large quantity it does not coagulate, but gives rise to the formation of abscesses. 7. The seat of the effusion is quite indeterminate and accidental. 8. The capillary vessels are ruptured; the colouration of the vessels disappears on maceration. 9. The coincidence of illness or general disorder of the system is quite accidental. 10. The hemorrhage of the mucous membranes is the result of accidental causes.

Spontaneous ecchymoses, 1. Are the effect of internal causes. 2. Are limited to

a small space, but then the spots are numerous. 3. Generally exist without any tumefaction; the blackish tint changes little and only slowly disappears. The colour is generally brown, or like the lees of wine. 4. In these ecchymoses the shade of colour is uniform over all the spot. 5. The temperature is the same as that of the sound parts. 6. Blood is only effused in small quantity and remains fluid. 7. General ecchymoses are observed over the whole body; local ecchymoses generally occur in the limbs, and especially on the lower extremities. 8. The capillary vessels are not ruptured, in general; the colouration of the tissue does not disappear on maceration. 9. A disease, or general illness, or organic disease, almost always precedes, and is the cause of spontaneous ecchymoses. 10. The mucous membranes are frequently the seat of spontaneous hemorrhages.—*Ibid.*

81. *Poisoning by Lead.* By MM. FLANDIN and DANGER.—(*Comptes Rendus.*) In a memoir read before the Academy of Sciences, these observers arrive at the following conclusions. 1. There exists no lead in the human body in the healthy state. 2. The symptoms, and particularly the cadaveric lesions produced by poisoning from lead, are quite characteristic. 3. If death follows immediately, lead will be found in the body as surely as arsenic or copper. It should be particularly sought for in the digestive canal, the liver, the spleen, the renal apparatus, and the lungs. It is not detected in the blood, the heart, the brain, the muscles, nor in the bones. 4. The best process for its detection, is, with a very slight modification, the same as for the detection of arsenic, antimony and copper. It consists in carbonizing the animal matter by sulphuric acid, heating the carbon to redness, treating it by hydrochloric acid, then by water, in order to employ on the liquid the reagents proper for characterizing lead. 5. Unlike copper, the lead absorbed is eliminated by the renal secretion. 6. The absorption of poisons is particularly induced by the *venæ portarum*, which explains why they are found in such large quantity, and some of them almost exclusively in the lower. 7. When the poisoning has been produced by the skin, the absorption or transmission of them is made principally by the superficial subcutaneous and submucous blood-vessels and lymphatics; having passed in particular into the digestive tube, by a kind of perceptible perspiration, the poison is rejected by the vomitings or by the stools, or else it is taken up by the system from the *venæ portarum*, absolutely as if it had been introduced by the stomach. Hence the utility of prescribing to those working in lead, who suffer from it, acid, saponaceous or sulphurous lotions, and baths. 8. In medico-legal investigations, certain organs should be exclusively operated on, and not all the parts of the body indifferently. The liver should be selected, and in ordinary cases the tenth part of this organ (500 grammes, about one pound) is sufficient.—*Chemist*, May, 1844.

82. *Trial for Infanticide.*—The prisoner, Ann Walters, an unmarried woman, had taken a place to go by a stage-wagon, on the 13th of April, 1841; she started by the wagon from Worcester on the evening of that day, and was in the wagon at about 10 o'clock on that night, at the Wellington Inn, which is situated on the Malvern Hills. It also appeared that she must have left the wagon after that time, as she overtook it at Ledbury. It was further proved in evidence, that she was delivered of a child at the road-side, between Wellington Inn and Ledbury, and that after the child was born, she carried it a distance of about a mile to the place at which the child was found dead, which was also at the road-side. It further appeared that this was a much frequented road, and that two wagon teams and several persons were on it about the time at which the child was left, and that a wagoner, who was passing along the road, heard the child cry, but instead of going to render any assistance, he went on and told some other persons, who went to the place where the child lay, and there found it dead from cold and exhaustion. The body of the child was quite naked, and the navel string was not tied. It also was proved, that the prisoner had

arranged with a woman to be confined in her house, and that she should be paid 3s. 6d. a week to take care of the child.

Judge Coltman, (in summing up.) If a party do any act with regard to a human being, helpless and unable to provide for itself, which must necessarily lead to its death, the crime amounts to murder. But if the circumstances are not such, that the party must have been aware that the result would be death, that would reduce the offence to the crime of manslaughter, provided the death was occasioned by an unlawful act, but not such as to imply a malicious mind. There have been cases where it has been held, that persons leaving a child exposed, and without any assistance, and under circumstances where no assistance was likely to be rendered, and thereby causing the death of the child, were guilty of murder. It will be for you, in the present case, to consider whether the prisoner left the child in such a situation that to all reasonable apprehension, she must have been aware the child must die, or whether there were circumstances that would make it likely, that the child would be found by some one else, and its life preserved, because then the offence of the prisoner would be manslaughter only. It is impossible to say that the offence of the prisoner can be less than manslaughter. It is for you to consider whether, under all the circumstances, this child was left in such a situation, that there was a reasonable expectation, that it would be taken up by some one else and preserved. Suppose a person leaves a child at the door of a gentleman, where it is likely to be taken into the house almost immediately, it would be too much to say, that if death ensued, it would be murder; the probability there would be so great, almost amounting to a certainty, that the child would be found and taken care of. If, on the other hand, it were left on an unfrequented place, a barren heath, for instance, what inference can be drawn, but that the party left it there, in order that it might die. This is a sort of intermediate case, because the child is exposed on a public road, where persons not only might pass, but were passing at the time, and you will, therefore, consider, whether the prisoner had reasonable ground for believing that the child would be found and preserved. Verdict—Guilty of manslaughter.—*I. Carrington & Marcham's Nisi Prius Reports*, p. 164.

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83. *The Queen v. Trilloe—Infanticide.*—There was strong evidence to prove that the child had been born alive, and that the prisoner had strangled it by fastening a handkerchief or some such thing round its throat, but it was clearly proved by Mr. Wood, the surgeon, who examined the body of the child, that it must have been strangled before it had been separated from the mother by the severance of the umbilical cord, and it was further stated by Mr. Wood, that a child has, after breathing fully, an independent circulation of its own, even while still attached to the mother by the umbilical cord, and that, in his judgment, the child had breathed fully after it had been wholly produced, and had, therefore, an independent circulation of its own, before and at the time it was strangled, and was then in a state to carry on a separate existence.

Judge Erskine, in summing up, said, "If you are satisfied that this child had been wholly produced from the body of the prisoner alive, and that the prisoner wilfully, and of her malice aforethought, strangled the child after it had been so produced and while it was alive, and while it had, according to the evidence of the surgeon, an independent circulation of its own, I am of opinion that the charge in the second and third counts of the indictment is made out against the prisoner, although the child at the time it was so strangled, still remained attached to the mother by the navel string. Verdict—Guilty. The case was reserved by the judge for the opinion of the fifteen judges, who held the conviction right.—*Ibid.*, p. 650.

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AMERICAN INTELLIGENCE.

ORIGINAL COMMUNICATION.

Case of Suspected Infanticide. By J. H. THOMPSON, M. D., of Salem, N. J.—As the true value of the Hydrastatic Test is “adhuc sub judice,” having on the one hand been gravely pronounced by judicial lips to be “a vulgar error,” a sentence very nearly, if not quite, in accordance with the opinions of some members of the medical profession, and on the other, by many of the distinguished ornaments of that same profession, considered under certain limitations an infallible guide in determining a most important medico-legal question, the following case is related with the single view of placing upon record one more observation in addition to those already made.

Hannah —, a white woman, a domestic residing in the family of Mr. B—, was believed to be pregnant, but positively denied the charge. She was married and had three children, but had not for several years lived with her husband, who resided in another part of the state. She had always borne a good character—had never been fond of company, rather avoided than sought it. She saw her husband sometime in October, 1842, not having seen him before for a long time, nor did she see him afterward. She slept one night in the same house with him, but not in the same room, and it was positively affirmed that he did not see her except in the presence of a third person. About the same period, through the persuasion of an associate, for a short time she was led into company of a questionable character, and was known to have been accompanied home on several occasions, by a young man, who, however, did not remain with her. She was repeatedly asked if she had made any preparation for the birth of her child; she constantly denied her pregnancy, and of course the necessity for any preparation. At daylight, on the morning of July 20th, 1843, Mrs. B— discovered that Hannah had been delivered. She had left her own room and gone to an unoccupied one in a distant part of the house. When asked for the child she said it was still-born, and that she had taken it into the garden, where in fact it was found, having been concealed under some bushes.

These facts having been made known to the coroner, a jury was summoned, and I was requested to conduct the post-mortem examination. Accompanied by Dr. Tuft, I proceeded to the place. We found the child to be a white male, of the average size; the nails were perfectly formed; the head was covered with hair; it was plump, and had, in short, every appearance of maturity. It was nineteen inches in length, and weighed six lbs. ten ounces. No marks of violence were found upon the body. The cord had been *cut* about five inches from the umbilicus—no ligature had been applied. The surface of the body was moderately pale. There was slight lividity of the lips and face. The chest, on external inspection, was rounded and evidently of full size. On opening the thorax, the lungs were seen nearly filling the cavity of the chest. They were of a general rosaceous appearance. After being very carefully removed, together with the heart and thymus gland, they were placed in fresh spring water of the ordinary temperature, and floated with great buoyancy. They were separated, and the right lung was cut into a number of pieces; on being returned

to the water they all floated as buoyantly as before. Although there was not the slightest appearance of putrefaction, (the birth had probably taken place eight or ten hours before the examination; the weather beside was cool for the season, the thermometer, at noon, in my office, being 72° F.,) and no probability that artificial inflation had been attempted, I placed one of the pieces in a strong linen cloth, and compressed it with all the force I was capable of exerting. On throwing this again into the water it did not appear in the slightest degree to have lost its buoyancy. The lungs appeared to be in every respect perfectly healthy—they crepitated when cut. The relative weight of body and lungs was 49.5, which is considerably greater than Ploucquets average estimate, and is also greater than that given by Dr. Beck. There was, however, a slight degree of inaccuracy in weighing both the body and lungs, which doubtless affected the result. The ductus arteriosus was not larger than one of the branches of the pulmonary artery. It was contracted in the *middle*, presenting somewhat of an hour-glass appearance.

As the jury had become exceedingly impatient at their detention, the dissection was not continued. The state of the ductus venosus, foramen ovale, and intestinal canal, however desirable it would have been to examine them, could not, I suppose, have thrown any additional light upon the subject, since it is well known that the changes from which an inference could be drawn, do not take place until some time after birth; and it is certain that this child, if born alive, had been permitted to live but a very short time. Had not enough been ascertained to justify the conclusion to which we come, that the child had not only been born alive, but that respiration had been perfectly established? The manner of its death was not so evident. If it had died from hemorrhage, would not the surface have been blanched and the blood-vessels empty? Writers on medical jurisprudence answer in the affirmative, and yet in this case the colour was not very different from natural, and the blood-vessels were full—certainly more than three ounces could have been collected from the cavity of the thorax alone. My own belief is, that the woman cut the funis and immediately afterward smothered her child in the clothes in which it was found enveloped, thus adding suffocation to hemorrhage, and so making “assurance doubly sure.” The appearance of the face strengthens this supposition. The verdict of the jury was that the child was born alive, and that its death was owing to neglect on the part of the mother. Here the matter rested—she was not tried for the offence.

Much might be said upon the subject of this indifference to the life of a child, did time and space permit. Since the above case occurred, I have seen an instance in which the child cried after the head was born, and detention was caused by the shoulders—the birth was completed in time to preserve the child. I have also been informed of a case, in which the child was suddenly expelled while the mother was standing on the floor. The funis was ruptured about four inches from the body—there was no hemorrhage, nor was the child at all injured by the fall.

DOMESTIC SUMMARY.

Angular Anchylosis of the Knee-Joint, treated by Dr. J. R. Barton's method.
—Dr. A. R. Kilpatrick reports in the *Western Journal of Med. and Surg.*, June 1844, a case of anchylosis successfully treated by Dr. PLATT BURR of Cheneyville, La., by Dr. Barton's method.

The subject of the case was a negro man 40 years of age, of stout frame, and good general health, who, while engaged, on the 12th December, 1840, in hewing a log, accidentally let the broad axe slip, and the corner of it struck the left knee with considerable force, on the inner side, and penetrated the side of the head of the tibia close to the patella. The wound was not more than an inch long, and soon healed up, although there was slight pain in the part. By exposure and active exercise, the knee was swollen rapidly to a very large size, and that, together with the pain, disabled him for work and forced him to take his bed.

The measures adopted for checking the inflammation were unsuccessful, and the whole limb became enormously enlarged, suppuration came on, and a great quantity of pus was discharged at three several openings, above and below the knee. The purulent discharge ceased, the limb was reduced in size, the muscles were flaccid, and the skin was loose, dry and crusty, so much so that when rubbed or thumped it emitted a sound like that of coarse brown paper or dry raw-hide. The knee still continued unnaturally large, and the skin on it was tight and glossy. As he suffered less pain when the leg was flexed, he was permitted to keep it in that position so long that it became fixed; the synovial fluid and membranes were destroyed, the femur, tibia and patella all united firmly together as if they were a continuation of one bone, and from the firm adhesion which had taken place, considerable force would have been required to disunite them. When he was seated, no one could perceive that any deformity existed; but on his assuming the erect position, his leg and foot projected backwards at a right angle with the other leg.

Dr. Burr being consulted, he advised an operation, and the patient consenting, Dr. B. operated on the 8th December, 1841, one year after the injury.

The patient was placed on a table with his legs hanging down over the end, his body and arms being held by assistants. "The first incision was made by commencing at a point opposite to the upper and anterior margin of the external condyle of the femur, and passing obliquely upwards across the front of the thigh, terminated on the inner side. The second incision commenced also on the outer side, about three inches above the first, and passing obliquely downwards across the front of the thigh, terminated at the point of the other incision, thereby forming an acute angle. The integuments, the extensor muscles, part of the vastus externus, and internus and the crureus were divided by these incisions. The triangular flap was then dissected up from the femur close to the condyles, and the soft parts on either side were pressed down out of the way, so as to admit of the free use of the saw. The only knife employed in all the operation was the common scalpel.

"The flap then being turned up and held out of the way, a common amputating saw was used, and by inclining it, a wedge-shaped piece of the femur was taken out, about two and a quarter inches at the base, and three lines at the apex. The femur was not completely divided by the saw, as was suggested by Dr. Barton, but about three lines were left undivided, which was fractured by forcibly drawing the leg back, and the spiculæ thereby formed answered the purpose admirably of keeping the extremities of the bone in their proper place; and, moreover, the danger of injuring the popliteal artery was thereby avoided.

"The time required for the operation was about five minutes. There were three small arteries divided which required ligatures; when they were secured the flap was returned to its place, secured by a few sutures, the ends of the ligatures were brought out and fixed, and adhesive strips and light compress and bandages completed the dressing.

"Before moving the patient from the table, the limb was placed at the same angle of flexion it was at before the operation, on a double-inclined plane similar to Amesbury's apparatus, with a movable cross piece to regulate and fix its angularity, and a foot piece with a shoe attached to it. The plane was rendered comfortable by long bags of carded cotton, suited to the shape of the parts and so adjusted as to prevent pressure or friction upon the popliteal region. The limb was kept in that angular position for some weeks, until it was thought the spiculæ and asperities of the bone were either absorbed or covered by depo-

site. The sutures and ligatures of the arteries were properly attended to and removed. Adhesion of the soft parts progressed rapidly and regularly to complete re-union with little pain or trouble.

"By means of the brace on the apparatus the limb was gradually straightened until brought very nearly straight, but agreeable to the suggestion of Dr. Barton, a very slight angularity was maintained intentionally, in order to prevent his heel, in walking, from striking against any obstacle or inequality which might be in the way. The double-inclined plane was then thrown aside, and the limb placed in the ordinary straight box used in common fractures, where it was kept for better than three months, at the expiration of which time he allowed to move about on a crutch, as the bones had knitted together pretty well."

In the month of June, 1842, he could walk about on his leg without the use of a staff, and went to work. But on the 15th of July, of the same year, in attempting to mount a ladder he missed his footing, and in the fall broke his leg again at the point of operation. As he had complained of his foot hurting in the instep, at the metatarsus and toes, especially when he walked much, and when standing on logs chopping, when it was reset the last time, it was placed in the straight box without any angularity, being quite straight. No bad results followed this fracture, and in less than two months he was able to be up and about again, and could walk very well without crutch or staff.

Dr. Kilpatrick says that he saw the patient on the 15th April, 1844, busily engaged in spading up the garden. He told Dr. K. that he could hoe and chop with as much ease as ever he did; and ploughing was not irksome to him.

Self-propelling Power of the Blood.—Dr. HORACE GREEN made the following communication on this subject to the New York Medical and Surgical Society.

"Opposite opinions," remarked Dr. G., "are still entertained by physiologists on this subject. Treviranus, Oesterreicher, Wolff, and several other microscopists, declare, that 'the blood is endued with the power of self-propulsion,' which they suppose to be exerted in the capillaries, during life, independently of the heart's action, and to continue after the latter has ceased; while, on the other hand, Baer, Wedemeyer, and, more recently, Müller, deny as positively the existence of a self-propelling power in the blood.

"Having been engaged of late in making some microscopic observations upon the blood and other animal fluids, this subject, said Dr. Green, among others, had engaged his attention; and he supposed it might not be uninteresting to the Society to hear the result of some experiments which have been directed to this point.

"Müller, who denies the existence of a power in the blood, independent of the heart's action, allows that there are two conditions under which the blood in the capillaries of a transparent part, separated from the body, may still be seen in motion by means of the microscope. One, where the blood continues to flow from divided vessels—the escape of the blood from the openings of these divided trunks imparting or causing a motion of the blood in the minute vessels toward the openings in the larger ones. The second condition under which motion is perceptible, is, when the direct rays of the sun are allowed to fall on a moist part separated from the body. The surface of the part thus becomes dry and wrinkled, and this constriction causes a rapid emptying of the capillary vessels, which, together with the effect of illumination by the direct rays of the sun, produces a flickering appearance; and in this way he imagines opposing observers have been deceived. Dr. G. has himself observed, in numerous instances, motion of the blood in capillary vessels, active and continued, independent of the heart's action, when the above condition of things could not have existed.

"By placing under the field of the microscope the most transparent part of the web of the foot of a very small frog, Dr. G. has observed many capillary vessels so minute as to be capable of admitting only a single file of red globules. These globules may often be seen running different directions in parallel vessels; and, not unfrequently, single globules, and sometimes two or three together, may be observed, separated apparently at a considerable distance from any

others, and yet, moving on slowly in some instances, and rapidly in others, independent of any *vis a tergo* power; so that, as the contractile power of the capillaries (except so far as regards the natural elasticity of their coats), is denied by these physiologists, the motion of these single globules must be independent of the heart's action, and dependent on an inherent power of their own. Not only this, but not unfrequently in watching the current of globules in these minute vessels, Dr. G. says that he has observed them to be suddenly arrested, and then to *recede* for some distance along the course of the vessel. This phenomena is accounted for by Müller, on the supposition that the vessels may have been compressed by slight motions of the frog. This could not have been the case, said Dr. G., in one instance which he recently noticed, where a capillary vessel was seen to pass directly through the centre of a pigment cell, in a frog's foot. In this vessel, red globules were seen repeatedly to run in *different directions* in the same vessel, and to pass each other in the centre of the cell. If the motion of the blood in the capillaries is entirely dependent upon the heart's action, how can we account for this power being exerted in different directions in the same vessel?

"Other evidences, said Dr. G., of this inherent power of the blood have been observed. Having removed an elongated uvula, a few days since, the most transparent portion of the truncated part was placed under the field of the microscope. Upwards of half an hour after the part was exercised, the blood was seen to move slowly along the capillary vessels; and yet, the precaution was taken to keep the piece moistened, so that the vessels might not contract from drying.

"Dr. Carpenter designates this motive force of the blood, the 'capillary power' of this fluid; and he believes that we are furnished with all the proof that can be needed of the existence, even in the highest animals, of a capillary power, which, though usually subordinate to the heart's action, is sufficiently strong to maintain the circulation by itself, when the power of the central organ is diminished. But the term which he employs, capillary power, is evidently inappropriate, inasmuch as this power remains in the globules *after* they are withdrawn from the capillaries. By placing a drop of fresh arterial blood upon the glass, and examining it with the microscope, the globules will be seen to be in active motion for *several minutes* after they are withdrawn from the artery; and in some instances, Dr. G. says that he has observed them to form currents, and to circulate regularly, for a short distance, as if they were still in the capillary vessels. The same vital movements may be observed in a drop of the menstrual fluid, if examined immediately after its escape from the vagina.

"These experiments may tend in some measure to establish the theory that the blood is endued with a vital power of self-propulsion."—*N. York Journ. of Med.*, May, 1844.

Epidemic Erysipelas.—Dr. D. MEEKER, in a communication in the Illinois Medical and Surgical Journal, (June 1844), states that the Epidemic Erysipelas made its appearance at Michigan City, Laporte co., Ia., in December, 1843, where it still prevails, though with diminished violence. Of sixty cases, one half have been fatal. "The commencement of the disease," he says, "was generally characterized by lassitude, cold or chilly sensations; in severe attacks, the cold stage lasting for some time, followed by high arterial action. In many cases, some swelling of the tonsillary glands, with an efflorescent or inflamed appearance of the mucous membrane of the fauces existed, with a dryness of the tongue, which was covered with a dark brown coat, neuralgic pains in the situation of the lymphatic glands of the neck, axilla, and frequently of the lower extremities. The inflammation did not make its appearance upon the skin in many cases until the second or third day, and sometimes not until a later period. In other cases, the internal organs became inflamed, without its making its appearance upon the surface at all.

"It seemed to attack the mucous membranes with avidity, extending sometimes from the inflamed fauces to the mucous membrane of the stomach, causing a burning sensation in that region, vomiting, great tenderness upon pressure over

the epigastric region, and in many other cases, the parenchymatous structure of the lungs was the seat of the disease. The pain in the chest was not acute but dull, with difficult respiration, and short dry cough, attended with constriction. In three cases, the mucous membrane of the ileum and colon was the original seat of the disease. In these cases the pulse was hard, wiry and contracted, with great distension of the bowels, and pain and tenderness upon pressure. The inflammation frequently made its appearance upon the ala of the nose, spreading rapidly over the face and scalp, attended with great swelling and distension, distortion of the countenance, and the eyelids entirely closed. Vesications, filled with a yellowish fluid, usually made their appearance upon the inflamed surface about the second or third day. The face and scalp were the most common seat of the disease, although, in some cases, the superior or inferior extremities became inflamed, attended with great effusion of serum into the cellular membrane. In some instances, the inflammation was of a phlegmonous character, sometimes superficially seated, when it was attended with less constitutional disturbance than the more deep-seated variety. It seemed to spread with greatest rapidity in damp weather. It also attacked nearly all puerperal females, not more than one escaping in ten cases at Michigan city. They were invariably attacked with a chill after the termination of labour, some as soon as six hours, others as late as the second day.—There was great tenderness, upon pressure, over the region of the uterus, which organ could be distinctly felt through the parietes of the abdomen, very much enlarged. In some of these cases of puerperal erysipelas, the inflammation involved the vagina and external organs of generation. The symptoms were generally as follows:

“General lassitude, rigors, neuralgic pains, soreness, and swelling of the tonsils, stiffness of the muscles of the part before inflammation made its appearance on the surface, a disposition to spread from point to point, increased arterial action, pulse hard and rather contracted, frequency from 100 to 120, and all cases attended with more or less bilious derangement. The most successful plan of treatment consisted in bleeding from the arm until a decided impression was made upon the system. This followed by a full dose of calomel, and, if necessary, some saline laxatives, or *ol. ricini* was given to quicken the operation. This cathartic seldom failed to bring copious discharges of bilious matter from the bowels.

“It was seldom necessary to repeat the bleeding, except when the lungs or some other of the internal organs were involved in the inflammation. Alteratives combined with diaphoretics—such as a combination of ipecac. and calomel—with gentle laxatives, after the force of the disease had been broken down by more active means, was the course usually pursued. The local applications found to be most beneficial, were the nitrate of silver and blisters. The blistering, no doubt, affords more prompt relief than any other application. By it we unload the cellular membrane of the effusion which has taken place, more effectually than by any other means. After vesication had taken place, the blistered surface was dressed with the warm water dressing, or some other calculated to promote the discharge of serum. The nitrate of silver, applied to the inflamed surface by penciling the part, or in strong solution, affords a prompt and effectual method of arresting the inflammation, which is sometimes so rapid as not to be arrested by any milder means. In such cases, it should be applied by dipping the stick of caustic in water, and applying freely over the inflamed surface, or by completely encircling it by running the pencil round its edges. I have used the iodine in one case, and it arrested the progress of the inflammation almost instantaneously. It may be used in the form of ointment, or a saturated tincture sufficiently strong to act upon the skin promptly.

“When the inflammation was more deeply seated, suppuration of the cellular membrane was the most usual termination. In such cases free incisions into the diseased part were necessary to give free exit to the matter, and some emollient poultice applied to promote the discharge. In cases attended with much œdema of the extremities, giving a doughy feel, incisions or punctures, as recommended by Mr. Liston, may be resorted to with beneficial results.”

UNIVERSITY OF PENNSYLVANIA.

MEDICAL DEPARTMENT.

At a Public Commencement held this day, April 4th, 1844, in the Musical Fund Hall, Locust Street, the Degree of Doctor of Medicine was conferred by the REV. JOHN LUDLOW, Provost, upon the following gentlemen; after which an address was delivered by DR. HORNER, Professor of Anatomy.

NAME.	RESIDENCE.	SUBJECT OF ESSAY.
Alston, Kemp P.	North Carolina,	Laryngitis Membranacea.
Anderson, Edward	Alabama,	Atmospheric Air.
Anderson, Mills T.	Mississippi,	Counter-Irritation.
Archer, Junius L.	Virginia,	Puerperal Fever.
Ashe, Richard P.	North Carolina,	Cataract.
Bardin, Almon Z.	Pennsylvania,	Intermittent Fever.
Bare, Adam S.	Pennsylvania,	Disease of the Ovaries
Barr, Peter	Virginia,	Jaundice.
Basye, John T.	Virginia,	Croup.
Baylor, John Roy	Virginia,	Intermittent Fever.
Benedict, William C.	New York,	Erysipelas with black tongue.
Blackfan, John W.	New Jersey,	Scarlatina.
Bleight, Samuel R.	Pennsylvania,	Intermittent Fever.
Bliss, William W.	Massachusetts,	Delirium Tremens.
Boyé, Martin H.	Pennsylvania,	Structure of the Nervous System.
Bryant, James W.	Virginia,	Scarlatina.
Buckles, Edwin Gray	Virginia,	Acute Meningitis.
Burton, John M.	Virginia,	Dysentery.
Cardeza, John T. M.	Delaware,	Hepatic Abscess.
Carter, Lewis W.	Virginia,	Diarrhœa.
Channing, William Francis	Massachusetts,	Application of Chemistry to Physiology.
Clarke, James L.	Virginia,	Phenomena of Catamenia.
Clark, William J.	Virginia,	Regimen for Dyspeptics.
Clingman, John P.	North Carolina,	Fever.
Compton, Franklin M.	Tennessee,	Inflammation.
Cooke, Thomas J.	Virginia,	Atmospheric Air.
Crane, Joseph S.	South Carolina,	Inflammation.
Crenshaw, Octavius A.	Virginia,	Spermatorrhœa.
Cullen, Thomas F.	Pennsylvania,	Anchylosis of Knee-joint.
Curran, William	Pennsylvania,	Dyspepsia.
Curwen, John	Pennsylvania,	Scrofulous Ophthalmia.
Custis, Peter	North Carolina,	Acute Gastritis.
Davidson, Robert	Pennsylvania,	Acute Dysentery.
Dejarnatte, George S.	North Carolina,	Mental Influence over the Organic Functions.
Dickey, Ebenezer V.	Pennsylvania,	Erysipelas.
Dillard, Richard	Virginia,	Strictures of Urethra.
Dilworth, Samuel Jr.	Pennsylvania,	Influence of Mind upon the body.
Dimmitt, Addison	Kentucky,	Physiology of the Circulation.
Dock, George	Pennsylvania,	The Blood as modified by disease.
Eldridge, William T.	Virginia,	Fractures.
English, Leison E.	New Jersey,	Influenza.
Faison, Henry W.	North Carolina,	Remittent Fever.
Farquharson, Robert J.	Tennessee,	Phenomena and causes of Inflammation.
Fetherman, Abraham H.	Pennsylvania,	Pertussis.
Foley, James T.	Virginia,	Cynanche Trachealis.
Foster, Peter S.	North Carolina,	Koinomiasmata.
Garnett, John N.	Virginia,	Chronic Gastritis.
Gaunt, Charles S.	Pennsylvania,	Mercury and its Compounds.
Gleason, Charles W.	Vermont,	Capillary Circulation.

NAME.	RESIDENCE.	SUBJECT OF ESSAY.
Gorman, Felix	Mississippi,	Intermittent Fever.
Graham, Chauncey W.	North Carolina,	Pertussis.
Graves, Robert	Virginia,	Fracture of the Femur.
Gray, Lewers D.	Pennsylvania,	Purpose and Province of Medical Science.
Green, Alfred W.	Pennsylvania,	Bronchocle.
Green, John B.	Virginia,	Icterus.
Green, Solomon	Virginia,	Dyspepsia.
Gregg, Edward F.	South Carolina,	Death.
Hale, John P.	Virginia,	Diseases of Menstruation.
Hale, Theodore B.	Pennsylvania,	Dysentery.
Hall, Edward A.	Pennsylvania,	Remittent Fever.
Happer, Andrew P.	Pennsylvania,	Influence of Medicine.
Hardey, Charles A.	Louisiana,	Congestive Fever.
Harris, James W.	Alabama,	Menorrhagia.
Harris, Robert P.	Pennsylvania,	Veratria.
Hatch, Thomas E.	New Hampshire,	Apoplexy.
Hathaway, Edmund V.	Rhode Island,	Scarlatina.
Hearne, Joseph T.	Alabama,	Functions of the Brain.
Henry, Bernard	Pennsylvania,	Aneurism.
Heywood, Benjamin	Massachusetts,	Spermatorrhœa.
Holliday, Daniel C.	Louisiana,	The Eye, a diagnostic sign of disease.
Holmes, Ephraim, Jr.	New Jersey,	Acute Peritonitis.
Howell, Junius H.	Tennessee,	Poisoning by Opium.
Hughes, J. Clayton	Alabama,	Puerperal Fever.
Hughes, William H.	North Carolina,	Puerperal Peritonitis.
Hopkins, James W.	Virginia,	Cæsarian Section.
Irwin, David D.	Mississippi,	Yellow Fever.
Jobs, Eugene	New Jersey,	Diabetes.
Joyner, Henry	North Carolina,	Intermittent Fever.
Joyner, William Henry	Florida,	Acute Peritonitis.
Keating, William V.	Pennsylvania,	Typhoid Fever.
Knott, James E.	Tennessee,	Protochloride of Mercury.
Latta, William S.	Pennsylvania,	Whooping Cough.
Leidy, Joseph	Pennsylvania,	Comparative Anatomy of the Eye of Vertebrated animals.
Long, William L.	North Carolina,	Remedial and poisoning influence of Lead.
Lundy, Etheldred W.	Virginia,	Cynanche Trachealis.
Mackie, William H.	Kentucky,	Poisoned Wounds.
Marshall, Alexander K.	Kentucky,	Superfætation.
Marshall, David B.	Pennsylvania,	Variola.
Mason, Randolph F.	Virginia,	Scarlatina.
Maupin, George W. O.	Virginia,	Scarlatina.
Mayer, Edward R.	Pennsylvania,	Nitrate of Silver.
Meem, A. Russell	Virginia,	Calomel, use of in Febrile Affections.
Moffett, George B.	Virginia,	Importance of the knowledge of Physi- ology and Diagnosis in the treatment of Disease.
Moss, Edgar	Virginia,	Amaurosis.
Mundy, James J.	Alabama,	Congestive Fever.
McClellan, John H. B.	Pennsylvania,	Medullary Fungus.
McIlhenny, William S.	Pennsylvania,	Dew.
McIntosh, William S.	Mississippi,	Chronic Hepatitis.
McLeod, Murdock	North Carolina,	Acute Pleuritis.
Osbourn, Richard K.	Maryland,	Medical treatment of Strangulated Hernia.
Palmer, William Gray	Maryland,	Menstruation.
Parrish, Joseph	New Jersey,	Scrofulous Diathesis.

NAME.	RESIDENCE.	SUBJECT OF ESSAY.
Pettit, John A.	Ohio,	Rubeola Vulgaris.
Phillips, William R.	New Jersey,	Electricity.
Phinney, Joel B.	New York.	Cutaneous Diseases.
Phinney, Leander B.	New York,	Ulcer of the Cornea.
Priestly, Joseph	Pennsylvania,	Wounds of Arteries.
Reid, James A.	Virginia,	Belladonna.
Reid, James R. M.	Georgia,	Remittent Fever.
Roberts, John H. Jr.	Georgia,	Acute Gastritis.
Rogers, Julian	Delaware,	Acute Hepatitis.
Royer, Lewis	Pennsylvania,	Delivery of Placenta.
Rucker, Angus A.	Virginia,	Iodine.
Sandt, Samuel	Pennsylvania,	Dyspepsia.
Scales, Rawley A.	North Carolina,	Puerperal Fever.
Scott, Samuel D.	Pennsylvania,	Physiology of the Eye-ball.
Sereven, Benjamin S.	South Carolina,	Circulation.
Seabrook, John G.	South Carolina,	Neuralgia.
Sharp, James H.	Tennessee,	Leucorrhœa.
Shaw, Elias F.	North Carolina,	Intermittent Fever.
Sherman, Washington	Pennsylvania,	Feigning of Disease.
Sims, Francis	Pennsylvania,	Rheumatism.
Skillman, Edward L.	Louisiana,	Variola.
Smith, Granville	Virginia,	Aneurism.
Snowden, John W.	Pennsylvania,	Diagnostic sign of Uterine Pregnancy.
Stillé, Moreton	Pennsylvania,	Pathology of Cyanosis.
Stone, Henry Osgood	Massachusetts,	Polypus of Nose.
Summerell, Joseph J.	North Carolina,	Influence of Opium in Autumnal Fevers.
Sykes, John B.	Alabama,	Heat as a Morbific agent.
Taliaferro, Lewis T.	Virginia,	De Febre Biliosa Remittente.
Taylor, John B.	Virginia,	Intestinal Worms.
Taylor, Moses B.	North Carolina,	The Pulse and its modifications.
Terrell, George F.	Virginia,	Menispermum Canadense.
Tiffin, Edward P.	Ohio,	Uterine Hemorrhage.
Tyler, William Jr.	Maryland,	Scarlatina.
Watson, William W.	Kentucky,	Tobacco.
Wesson, Clement H.	Ohio,	Primary Syphilis.
White, Elias A.	North Carolina,	Gastritis.
Wickham, John	Virginia,	Inflammation of the Kidneys.
Wileox, Edward S.	Pennsylvania,	Fractions.
Wilkinson, T.	Alabama,	Moral Medicine.
Williams, Henry F.	North Carolina,	Menstruation.
Wilson, Benjamin	Virginia,	Bilious Remittent Fever.
Wilson, Samuel	Pennsylvania,	Pleuritis.
Wilson, William	Pennsylvania,	Tartar Emetic, use of in Obstetrical practice.
Wilson, William M.	Virginia,	Scarlatina.
Wilson, Thomas H.	Pennsylvania,	Dysentery.
Wood, Thomas	Pennsylvania,	Inversion of the Womb.
Woodville, J. Lewis	Virginia,	Hernia.
Wylie, William	South Carolina,	Epidemic.

At the commencement in July, 1843, the Degree of Doctor of Medicine was conferred upon

Bagley, Anderson	Virginia,	Fractions of Thigh.
Boon, James H.	North Carolina,	Fractions.
Michie, Theodore A.	Virginia,	Acute Rheumatism.

TOTAL FOR COLLEGIATE YEAR, 153.

W. E. HORNER, M.D.,
Dean of the Medical Faculty.

UNIVERSITY OF PENNSYLVANIA.

MEDICAL DEPARTMENT.—SESSION 1844-5.—The Lectures will commence on Monday, the 4th day of November, and be continued, under the following arrangement, to the middle of March ensuing:—Practice and Theory of Medicine, by Nathaniel Chapman, M. D.; Chemistry, Robert Hare, M. D.; Surgery, William Gibson, M. D.; Anatomy, William E. Horner, M. D.; Institutes of Medicine, Samuel Jackson, M. D.; Materia Medica and Pharmacy, George B. Wood, M. D.; Obstetrics and the Diseases of Women and Children, Hugh L. Hodge, M. D. A Course of Clinical Lectures and Demonstrations, in connection with the above, is given at the very extensive and convenient Infirmary called the Philadelphia Hospital.

Clinical Medicine, by W. W. Gerhard, M. D.; Clinical Surgery, Drs. Gibson and Horner.

Clinical Instruction in Medicine is also given from the 1st day of November to the 1st day of March by Dr. Wood, in the Pennsylvania Hospital, an institution which is well known as one of the largest and best conducted Infirmaries in the United States.

The rooms for Practical Anatomy will be opened October 1st, and continued so to the end of the Course. They are under the charge of Paul Beck Goddard, M. D., Demonstrator, with a supervision on the part of Dr. Horner.

Extensive cabinets on Anatomy, Materia Medica, Chemistry, Surgery, and Obstetrics exist.

The Professor of Materia Medica, besides his Cabinet, has an extensive and well-furnished Conservatory, from which are exhibited, in the fresh and growing state, the native and exotic Medicinal Plants.

W. E. HORNER, M. D.

April 1st, 1844. *Dean of the Medical Faculty, 263 Chesnut Street, Philadelphia.*

JEFFERSON MEDICAL COLLEGE, SESSION OF 1844-45.

The regular Course of Lectures will commence on Monday the 4th of November, and end on the last day of February. Robley Dunglison, M. D., Professor of Institutes of Medicine, &c.; Robert M. Huston, M. D., Professor of Materia Medica and General Therapeutics; Joseph Pancoast, M. D., Professor of General, Descriptive, and Surgical Anatomy; John K. Mitchell, M. D., Professor of Practice of Medicine; Thomas D. Mütter, M. D., Professor of Institutes and Practice of Surgery; Charles D. Meigs, M. D., Professor of Obstetrics and Diseases of Women and Children; Franklin Bache, M. D., Professor of Chemistry. Lectures and Practical Illustrations will be given at the Philadelphia Hospital, one of the most extensive and valuable institutions in the United States, regularly through the Course, by Dr. Dunglison on Clinical Medicine, Dr. Pancoast on Clinical Surgery, and at the Dispensary of the College, by Professors of the Institution. The Dissecting Room will open on the first of October, under the Professor of Anatomy, and Clinical Instruction in Medicine and Surgery will be given at the Dispensary of the College.

R. M. HUSTON, M. D., Dean of the Faculty.

UNIVERSITY OF NEW YORK.

MEDICAL DEPARTMENT.

The annual session of lectures in this institution will commence on the last Monday in October, and close on the last day of February following.

Valentine Mott, M. D.,	Professor of Surgery.
Granville S. Pattison, M. D.,	" Anatomy.
John Revere, M. D.,	" Practice of Medicine.
Martyn Payne, M. D.,	" Institutes of Medicine and Materia Medica.
Gunning S. Bedford, M. D.,	" Midwifery.
John W. Draper, M. D.,	" Chemistry.

The fees for a full course of lectures amount to \$105. Matriculation fee \$5. The fee for admission to the dissecting rooms and demonstration \$5.

Respectable board can be obtained in the vicinity of the University at from \$2.50 to \$3.00 per week.

The students have an opportunity of *daily* attendance at the New York Hospital. The Surgical and Obstetric Cliniques, the Eye and Ear Infirmary, and the public Dispensaries are open to them *gratuitously*.

By order of the Faculty.

JOHN W. DRAPER, M. D., *Secretary.*

CASTLETON MEDICAL COLLEGE.

There will be annually *two* full courses of lectures in Castleton Medical College, each course continuing *sixteen weeks*; the *spring session* commencing on the last Thursday in February, the *fall session* on the first Thursday in August, under the following arrangements:

Materia Medica and Physiology,	by Joseph Perkins, M. D.
Obstetrics and Medical Jurisprudence,	“ Chauncey L. Mitchell, M. D.
Chemistry and Natural History,	“ Ezra S. Carr, M. D.
Theory and Practice of Medicine,	“ Wm. Sweetser, M. D.
Principles and Practice of Surgery,	“ Alfred C. Post, M. D.
Descriptive and Surgical Anatomy,	“ Samuel Packman, M. D.
Demonstration of Anatomy,	“ Egbert Jamieson, M. D.

Fee for each course \$50; Matriculation \$5; Graduation \$16; for those who have attended two courses of lectures at other Medical Colleges \$10.

Boarding, including the expenses of room, fuel, and light, can be obtained at from \$1.50 to \$2.25 per week.

J. PERKINS, *President*.
E. S. CARR, *Registrar*.

Castleton, Vermont, May 23, 1844.

MEDICAL INSTITUTE IN RICHMOND, VA.

The subscriber presents the following scheme for private Medical Instruction, and respectfully solicits the countenance of the members of the profession who may approve it. The course of instruction will embrace *two years*—a Junior and Senior Year—each of which will be divided into a Summer and Winter Session. The Summer Session to commence April 1st, and terminate September 1st. The Winter Session will commence November 1st, and terminate March 1st.

The fee for the year, embracing a Summer and Winter Session, \$70 *in advance*. For either Session separately, \$40 *in advance*. The exercises of the Institute will consist of lectures, recitations and examinations upon the several branches of Medicine.

ARRANGEMENT OF STUDIES.

JUNIOR YEAR.—*Summer Session.*—Special Anatomy, Special Physiology, Materia Medica and Therapeutics, Chemistry. *Winter Session.*—To the summer studies will be added Surgical Anatomy, Surgery, (*Theoretical and Practical*,) Theory and Practice of Medicine, Midwifery.

SENIOR YEAR.—*Summer Session.*—General Anatomy, Principles of Pathology, Pathological Anatomy, General Physiology, Auscultation, Medical Jurisprudence. *Winter Session.*—Review of all the studies of the Junior and Senior Years.

The subscriber hopes to remedy, in a great degree, the existing defective system of elementary medical instruction, by arranging the several branches in the order in which they should be taken up by the student, and at the same time placing before him such authorities as are believed to present the principles of Medical Science in their present advanced condition. In addition to the above, the student will have access, at all times, to the Medical and Surgical cases under treatment in the Alms House, College Infirmary, and Penitentiary, affording him ample opportunity of obtaining practical information, and testing by observation, the accuracy of the principles which are being inculcated. Address

AUG. L. WARNER, M. D.

Richmond, Feb. 7, 1844.

MRS. JAMES BETTS' UTERINE SUPPORTER.

*Eleventh and Chesnut Streets, Philadelphia, for the Relief and Cure of
Procidentia and Prolapsus Uteri.*

A CAUTION.—Mrs. Betts, having seen various imitations and counterfeits, cautions the profession against imposition by substituting other inventions for those of her own make, and which are destitute of all the important requirements of her Supporter. Those made at Mrs. Betts' establishment, have her written signature enclosed in a circular of letter-press, and those not having it may be recognized as spurious.

TESTIMONIALS.

From Prof. S. Jackson, M. D., of the University of Pennsylvania.

"The Abdominal and Perineal Supporters, made by Mrs. Betts, of this city, I can recommend to the medical profession and to others after several years' experience of their use.

"These instruments are adapted to remedy the inconveniences depending on a sinking down of the uterus, and its compression, from the incumbent weight of the abdominal viscera, pressing into the pelvis, from a relaxation of the abdominal muscles. In this state of the organ, exercise is attended with so much pain and other suffering as to be difficult or impossible.

"Mrs. Betts is a lady of intelligence, education, probity and excellent manners; the greatest confidence can be placed in her."

February 26, 1842.

From T. D. Mütter, M. D. of Jefferson Medical College, Philadelphia.

"My dear Madam,—It affords me much pleasure to state that I have repeatedly employed your supporter in prolapsus uteri, and with the most decided benefit. I have no question of its value as a remedy for the complaint for the relief of which it has been invented."

December 11, 1842.

From Wm. Harris, M. D., Lecturer on Obstetrics in the Philadelphia Medical Institute.

"One of the worst cases I have ever seen was completely cured by the Supporter, in a little more than a year, and some less formidable have been relieved in from three to six months. I recommend this instrument cordially to the medical profession, believing it to be one of the greatest improvements of modern times.

"February 24, 1842."

Baltimore, April 11, 1844.

"I have carefully examined the application of the 'uterine supporter' invented by Mrs. Betts, and find in it every thing to praise and nothing to blame. Ten ladies of this city, who have made use of it at my suggestion, have found it quite comfortable, and superior to those made in Paris or in this country; and it is with pleasure that I approve of its application in all cases of uterine prolapsus.

"P. CHATARD, Senr., M. D."

Clinique at the College of Physicians and Surgeons, New York, by Prof. Gilman, April 22, 1842.

"Professor Gilman condemned, in toto, the use of the pessary, and recommended the Supporter introduced by Mrs. Betts."

From Saml. McClellan, M. D., Philadelphia.

"I have found Mrs. Betts' supporter the very best instrument of the kind I have ever yet met with in the whole of my professional experience.

"I have recommended it, and will continue to do so, as the most successful of its class in cases of uterine displacements. Make reference to me as to its merits."

Philadelphia, May 5, 1843.

Wholesale agents in Philadelphia, G. W. Carpenter & Co., and J. C. Turnpenny. Baltimore, Mackenzie & Co., Druggists.

NOTICE

THE

AMERICAN JOURNAL

OF THE

MEDICAL SCIENCES.

No XVI.—OCTOBER, 1844.

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PUBLISHERS' NOTICE.

In presenting the concluding number for the year of **THE AMERICAN JOURNAL OF THE MEDICAL SCIENCES**, the Publishers must offer their thanks to the profession for the increased favour extended to this long-established periodical, now the oldest Medical Journal in the Union. As an evidence of this patronage it may be stated, that notwithstanding an enlarged edition was printed for this year, at the present time not a single copy of the January number can be supplied.

It is intended to continue the work as heretofore, with about 264 large pages, quarterly, with such cuts and plates as are essential to illustrate the different papers; and *particular attention* is invited to that portion embracing

THE RETROSPECT FOR THE QUARTER,

Presenting, as it does, the most copious Summary of the Improvements and Discoveries in Medicine and Surgery, from all the various Journals published abroad and at home.

With a view of extending the circulation of the Journal, the publishers are now furnishing, with it—

A MONTHLY PERIODICAL, FREE OF CHARGE,

To such subscribers as remit Five Dollars in advance.

Attention is solicited to the following terms:—

Those persons who remit Five Dollars by the last of January next will receive not only The Medical Journal for 1845, but the Medical News and Library for 1845 free of any charge.

For Ten Dollars they will furnish the Journal for 1845 and 1846, and the News for 1844, 1845 and 1846 free of any further charge.

Subscribers who have not yet paid for the year 1844, are particularly requested to remit for the present year FIVE DOLLARS now that the last number is sent. Such subscribers are informed that if Ten Dollars are remitted by the first of January next, it will be placed to their credit for the Journal for 1844 and 1845, and the News for the same years sent free of charge.

No such terms can be made except to subscribers who remit *in advance, free of postage, and direct to the Publishers.*

Agents can furnish the News *gratis* to be sent by mail, only in cases where the subscription, Five Dollars, for the Journal, is *paid in advance*; under no other circumstances will they send The News gratis.

Early orders are solicited, as very few more copies of the Journal will be printed than are actually subscribed for, and subscribers may be disappointed in obtaining the early Numbers of the year, as was the case the present year.

The *Medical News and Library* for 1845 will contain, in addition to the News of the month,

THE SURGICAL LECTURES OF SIR BENJAMIN BRODIE;

Thus following Watson's Practice of Physic, (which occupied the Library portion of the News for 1843 and 1844,) with a work on Surgery of great practical value, and by one of the first and most authoritative surgeons of the day. The pages of the Lectures will be so arranged that, when complete, they can be bound in a volume.

The News and Library will be issued monthly, and contain 32 pages, and go by mail as a newspaper. Price One Dollar a year, payable in advance, and in current funds, free of postage.

Postmasters are at liberty to frank remittances in payment for subscriptions.

Philadelphia, Oct. 1st, 1844.

TO READERS AND CORRESPONDENTS.

WE invite attention to our publishers' notice, acknowledging the increased favour extended to this journal during the past year, and promising renewed efforts on their part to render it worthy of further patronage. On our part we shall spare no labour to accomplish the original object of this journal, which was to establish a NATIONAL WORK, *devoted exclusively to the improvement of Medical Science, and to the elevation of the character and dignity of the profession, to the entire rejection of all LOCAL and INDIVIDUAL interests and PARTY views.*

In the selection of original papers, we shall give preference always to those of *practical* value, entirely excluding such as do not convey useful information and will not be creditable to our country abroad.

In the department of Reviews and Bibliographical Notices, we shall endeavour to make our readers acquainted, at the earliest possible period, with all the most important new works, domestic and foreign; and while the opinions of the authors will be freely canvassed, it will be required that criticisms shall be made with candour, and in that temperate and courteous tone which alone comports with the dignity of science. These articles are always authenticated by the author's signature, which, by securing to him the credit of his labour, affords a stimulus to perform it well, and at the same time, by subjecting him to the responsibility of authorship, tends to restrict criticism within proper bounds.

The Summary will present a complete and condensed record of all the Discoveries and Improvements in the medical sciences, compiled from the various journals of Europe and America. Most of these journals are regularly received in exchange, and these, with others, furnished by the liberality of our publishers, afford us the most ample means of presenting the earliest intelligence of every new fact or suggestion of practical value that is offered.

The profession, in every part of the union, are invited to record, in its pages, the results of their observations and experience. Every physician is deeply interested in the promotion of the objects which it is the aim of this journal to advance, and he will benefit himself by contributing to its success.

The following works have been received:—

A System of Human Anatomy, General and Special. By ERASMUS WILSON, M. D., Lecturer on Anatomy. London. Second American edition, edited by PAUL B. GODDARD, A. M., M. D., Lecturer on Anatomy and Demonstrator in the University of Pennsylvania, &c. &c.; with over two hundred illustrations by Gilbert. From the second London edition. Philadelphia, Lea & Blanchard, 1844. (From the publishers.)

A Manual of Chemistry, containing a condensed view of the present state of the Science, with copious references to more extensive treatises, original papers, &c., intended as a Text Book for Medical Schools, Colleges and Academies. By LEWIS C. BECK, M. D., Professor of Chemistry in Rutgers Medical College, New Jersey, and in the Albany Medical College. Fourth edition, revised and illustrated, with numerous wood cuts. New York: W. E. Dean, 1844. (From the publisher.)

A Practical Treatise on Midwifery : exhibiting the present advanced state of the Science. By F. J. MOREAU, Professor of Midwifery and the Diseases of Women and Children, in the Faculty of Medicine of Paris, &c. &c. &c. Translated from the French by THOMAS FORREST BETTON, M. D., and edited by PAUL B. GODDARD, A. M., M. D., Lecturer on Anatomy, and Demonstrator in the University of Pennsylvania, &c. &c. &c., with eighty plates, comprising numerous illustrations. Philadelphia, Carey & Hart, for J. N. Loomis, 1844. (From the publishers.)

The Anatomical Atlas, Illustrative of the Structure of the Human Body. By HENRY H. SMITH, M. D., Fellow of the College of Physicians, under the supervision of WILLIAM E. HORNER, M. D., Professor of Anatomy in the University of Pennsylvania. Parts iii., iv. and v. Philadelphia, Lea & Blanchard, 1844.

Human Health ; or the Influence of Atmosphere and Locality ; change of air and climate ; food, clothing, bathing and mineral springs, exercise, sleep, corporeal and intellectual pursuits, &c. &c., on healthy man ; constituting Elements of Hygiene. By ROBLEY DUNGLISON, M. D., Professor of Jefferson Medical College, &c. &c. A New Edition, with many modifications and additions. Philadelphia, Lea & Blanchard, 1844. (From the publishers.)

The Cyclopaedia of Practical Medicine, edited by JOHN FORBES, M. D., F. R. S., ALEXANDER TWEEDIE, M. D., F. R. S., and JOHN CONOLLY, M. D., Revised with Additions. By ROBLEY DUNGLISON, M. D. Parts viii., ix., x., xi., xii., xiii. and xiv.: Philadelphia, Lea & Blanchard, 1844.

Medico-Chirurgical Transactions, published by the Royal Medical and Chirurgical Society of London. Second series, vol. viii. London, 1843. (From the society.)

Miscellaneous Contributions to Pathology and Therapeutics ; being a series of original and practical papers on Rickets, Hydrocephalus, Impotence and Sterility, Pulmonary Apoplexy and Hæmoptysis, &c. &c. By JAMES RICHARD SMYTH, M. D. London, Simpson, Marshall & Co., 1844. (From the author.)

Medical Communications of the Massachusetts Medical Society, vol. vii., part iii. Boston, 1844. (From the society.)

A Treatise on the Medical Jurisprudence of Insanity. By J. RAY, M. D., Superintendent of the Maine Insane Asylum, second edition, with additions. Boston, W. D. Ticknor & Co., 1844. (From the publishers.)

Natural History, Pathology and Treatment of the Epidemic Fever, at present prevailing in Edinburgh and other towns, Illustrated by Cases and Dissections. By JOHN ROSE CORMACK, M. D., Edin., F. R. S. E., Fellow of the Royal College of Physicians of Edinburgh, Physician to the Royal Infirmary. London : John Churchill, 1843. (From the author.)

The Oculist's Vade-Mecum : a complete Practical System of Ophthalmic Surgery, with numerous wood-cuts and coloured engravings of the diseases and operations on the eye. By JOHN WALKER, M. D., Surgeon to the Manchester Eye Hospital, formerly Lecturer on the Eye, in the Manchester Royal School of Anatomy and Medicine, &c. London, 1843. (From the author.)

Über eine neue Reihe subcutaner Operationen. Von DR. W. HENNEMANN. Rostock, 1843. (From Dr. Oppenheim.)

Beweis der von der Begattung unabhängigen periodischen Reifung, und Lösung der Eier der Säugethiere und des Menschen als der ersten, Bedingung ihrer Fortpflanzung. Von TH. L. W. BISCHOFF, Doctor der Medicin, &c. &c. Giesen, 1844. (From Dr. Oppenheim.)

Drei chirurgische Abhandlungen, über die plastische Chirurgie des Celsus,

über organische Verwachsung, und den in das Fleisch gewachsenen Nagel. Von Dr. EDWARD ZEIS. Dresden, 1843. (From Dr. Oppenheim.)

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ERRATA.

Page 388, line 14 from top, for *Martin* read *Bonnet*.
 “ “ 6 bottom, *Martin* read *Bonnet*.

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THE
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OCTOBER, 1844.

ART. I.—*On the Bilateral Operation of Lithotomy; and on Lithotrity in the Female.* By JOHN C. WARREN, M. D., Professor of Anatomy and Operative Surgery in Harvard University, Boston.

THE operation of lithotomy is so rare in this place, that it would demand a longer period than the life of one practitioner to settle the question, in this part of the country, as to the best mode of operating. In the course of forty years, I have been called on to perform all the operations of lithotomy which have been done, during that period, in the city of Boston. The whole number has not exceeded twenty-five, inclusive of lithotrity cases, in a population which, during the period mentioned, has increased from about 26,000 to more than 100,000. Of the twenty-five persons thus operated on, not more than three were natives of Boston or its vicinity; the others came from the remote parts of Massachusetts, from New Hampshire, from a calcareous district in Maine, and from Nova Scotia. Perhaps it may be proper to add, that, of the cases I have operated on, two have died; one of these was a case of very unfavourable nature, the patient being of gross constitution, bad health, and having a very large stone adherent to the anterior part of the bladder: he died of suppuration in the pelvis. The other was the case of a patient who was doing perfectly well, but, on the fifth day from the operation, he indulged himself in eating heartily: he died of general peritonitis.

The comparative immunity of this city, and of this section of the country, has been a subject of inquiry; but, as we are ignorant of the causes which favour the production of urinary calculi generally, we cannot expect to ascertain the reasons why the inhabitants of this vicinity are exempted. To resolve the question satisfactorily, will require an extensive collection of observations in the different sections of this country.

It may be stated that Boston and its immediate vicinity contain no calcareous rocks; that the spring-water of Boston is abundant in muriatic salts, and that the whole of this region is exempted from intermittent fever. I am induced to state this last fact, because some authors have expressed the opinion that stone and intermittent fever have their origin in a state of constitution generated by miasma. Most of the facts, within my knowledge, would lead me to the belief that the stone is more likely to be produced by calcareous water than by atmospheric miasmata; although I am aware that there is a strong objection to this last opinion, in the diversity of composition of calculous concretions, as some of them are entirely destitute of calcareous substance. It is known, moreover, that, in the calcareous regions of this country, and especially on the banks of the great rivers, which run through a calcareous soil, the occurrence of urinary calculus is vastly more common than it is here. A distinguished surgeon of Montreal informed me that, when he had been in practice but a few years, he had operated on forty cases of stone in the bladder. Dr. Dudley, of Lexington, Kentucky, has operated on from a hundred and fifty to two hundred cases. The operations by Drs. Mott, Stevens and others in New York; by Drs. Gibson, Randolph and other surgeons in Philadelphia; and by Dr. Smith and various gentlemen of Baltimore, are very frequent. Happening to be in Philadelphia in the spring of 1843, I saw two cases operated on by Dr. Norris, one case of lithotrity by Dr. Mütter, and the latter gentleman had another case for lithotomy, on which he was about to operate. It may be further remarked that, in all the places last mentioned, intermittent fever exists, and, so far as I know, has always existed.

The particular object which I have in view, in this communication, is to direct the attention of our profession to the best mode of doing the operation of lithotomy. I have, till recently, performed the lateral operation, formerly with the gorget, and latterly with the knife. In the two cases alluded to above, which terminated unfavourably, the gorget was employed. Accident led me, a year or two since, to examine the merits of the bilateral operation more exactly than I had ever done before. In this investigation, I many times dissected the organs concerned in this operation, both before and after having done it on the dead body. The result was so satisfactory that, in a case particularly adapted for this mode of operating, I ventured to do it on the living body, and found it to be comparatively so easy in the performance, and so successful in the result, that, in the next case which presented itself, I was induced to repeat it. These cases I ask leave to bring before the profession in this country, in order to invite their examination into the merits of this mode of extracting stone from the bladder.

CASE I.—G. T., a married man and a farmer, born in Middlebury, Massachusetts, and 53 years of age, was admitted to the Massachusetts General Hospital on the 13th of January, 1842, for incontinence of urine.

A very imperfect history of the case is given in the records of the hospital, the regular house-surgeon being absent at the time of his admission. It appears, however, that he was, for two months, in 1824, a patient in the house, in consequence of some difficulty about the urinary organs.

For the past sixteen years he has been obliged to use the catheter to draw off his water. During this period he suffered no pain, until two years since, when an abscess formed, and broke near the neck of the bladder. Since then he has suffered great and gradually increasing pain, which has now become constant and almost insupportable.

His urine is, and has been for some time back, discharged involuntarily and continually; it is intermixed with pus and mucus, and of an excessively fetid odour; it is often coloured with blood. The urethra, he reports, is occasionally obstructed by this muco-purulent matter, which is removed by passing the catheter. Such is the substance of his history, as taken from the records.

The glans penis was enlarged; the prepuce was elongated, so as to form phymosis. The perinæum was the seat of a hard tumour, about an inch in length, extended between the scrotum and the anus: this tumour was probably a consequence of the chronic inflammation, to which these parts had been so long subjected.

His external appearance was marked by suffering; he was pallid and emaciated; the muscles of his face were habitually contracted. The constant discharge of offensive urine and pus, and the consequent contamination of his clothes and bed-clothes, rendered the business of examination more than commonly unpleasant.

An instrument, being passed by Dr. Hayward, immediately struck a calculus substance. Two or three days after, I examined him in company with Dr. H., and, introducing a sound, found it arrested, after it had penetrated about three-fourths of the length of the instrument, by a stone, which was evidently not situated in the bladder. An attempt to cause it to penetrate beyond this point was not, at this time, successful, and, the patient complaining of great suffering from the examination, the instrument was withdrawn. I then made an examination per anum, and found this part exceedingly sensitive, especially on its anterior wall, so that the contact of the finger produced evacuation of flatus and fæces. The prostate gland was much enlarged, and, at one point, appeared very hard.

On a subsequent examination, the sound was passed a little way on one side of the stone, and afterwards Dr. Hayward, who had charge of the patient at the time, passed it beyond this stone, and apparently into the urinary bladder. Another examination, which I made some time after, satisfied me of the existence of two stones—one of which occupied the neck of the bladder, and entered into that part of the urethra surrounded by the prostate gland. This first stone prevented any closure of the neck of the bladder, and was thus the cause of the non-retention of the urine. The other

stone appeared to be in the urinary bladder, which was, however, excessively contracted, from its not being at any time dilated with the urine.

The patient was ordered to confine himself, in a great measure, to the horizontal posture; leeches were applied to the perinæum once in three days, with the hope of lessening the chronic inflammation in and about the urinary passages. The bowels were carefully regulated, and he took, occasionally, small doses of nitrate of potassa; his food was of a generous nature in a moderate quantity.

Under this treatment, aided by the use of opiates, his sufferings were somewhat diminished, and his general health improved, so that he was thought to be in a proper state for an operation, for which he was very anxious. The case being of a peculiar character in some respects, it appeared to me that the lateral operation of lithotomy could not be judiciously employed for the following reasons:—

First, a stone being apparently wedged in the prostate gland, and occupying the whole space of the urethra within that part, an incision of the left lobe of the prostate, of sufficient size to remove this stone, could not be made with the usual instrument, on account of the interference of the stone with the extremity of the probe-pointed knife, or gorget.

Second, an incision down to the prostate, in the part where the lateral operation is usually performed, would be unnecessarily circuitous.

Third, there would probably be a difficulty in manœuvring the forceps in the deep wound made in the lateral operation, in consequence of there being no cavity about the stone.

For the reasons above stated, I was led to consider the practicability of other modes of removing the stone. Lithotrity, of course, presented itself in the first place, but a little reflection showed, that the objection to the use of the forceps in the lateral operation might hold with still more force in regard to lithotrity, since the want of room would prevent the opening of the instruments, which are used for seizing and breaking the stone.

The operation by the rectum could have been executed with great facility from the proximity of this part to the stone, and the great relaxation of the anus: the objection to this operation was the probability of a recto-vesical fistula.

Another mode of operating, which presented itself, was, the transverse incision of the perinæum, according to the method recorded in the works of Celsus, and since improved by Dupuytren and other distinguished surgeons. This manner of operating seemed to have the advantage, first, of conducting to the stone by the shortest route from the exterior of the perinæum, and secondly, that, in this manner, fewer and less important parts would be wounded than in any other. This method was, therefore, concluded on.

The patient was prepared by taking a purgative the day previous, and on the morning of the operation, a common enema, followed by another of two ounces of water, containing two hundred drops of the tincture of opium.

The operation was performed February 5th, in the presence of the medical class, and various medical gentlemen of the city; and I was assisted particularly by Drs. Hayward, Townsend, and Jeffries, attending and consulting surgeons of the hospital.

In the first place, a sound was introduced to ascertain the existence of the stone, which was very readily done, because an instrument could not enter the bladder without striking the stone. The rectum was next examined, to ascertain if it were free from fæces.

After these preliminary arrangements, the patient's hands and feet were bound together in the mode usual in this operation. A staff of large dimensions, grooved as usual, was then placed in the urethra, conducted to the stone, and there fixed. A crescentic incision was now made across the perinæum, between the scrotum, on the fore-part, and the verge of the anus, on the back part, its concavity looking towards the anus. This incision was two inches and a half long, three-fourths of an inch in front of the anus, with the two extremities of the wound directed towards the tuberosities of the ischia. It divided the skin, superficial fascia of the perinæum, adipose tissue, and exposed the bulb of the urethra. The latter was then raised, and the urethra being drawn by the staff towards the perinæum, while the operator passed his finger into the rectum, a longitudinal incision was made in the membranous part of the urethra, behind the bulb and in front of the prostate gland.

A straight, short, narrow, probe-pointed knife, with a long handle, was then passed along the groove of the staff into the bladder, with some interference from the stone, which prevented it from readily entering.* The staff was now withdrawn, and the knife, supported by the forefinger of the left hand, was directed towards the left tuberosity of the ischium, cutting the prostate gland to the extent of three-fourths of an inch:—the same was done on the other side.

The finger then passed freely into the bladder, pushing before it a considerable calculus, which could not have been seized in its original situation, on account of the difficulty in expanding the forceps. The knife was now withdrawn, and upon the finger remaining in the bladder, the forceps were introduced. By them the stone was readily struck, immediately grasped, and brought to the orifice of the wound: but having been seized by its longitudinal diameter, it could not pass, and was, therefore, dropped, and laid

* The lithotome proposed by Dupuytren, does not appear to me to be an instrument which is calculated to make an incision of a definite extent, as, on account of the length of its blades, there is a spring or yielding of them which renders the wound of the prostate gland smaller than the opening of the instrument. Another objection to its use is, its complexity, for complex instruments should always be avoided, when simple ones may be made to answer. A third objection is, that this instrument, after its introduction into the bladder, requires to be turned over, a movement by which the instrument might possibly be displaced.

hold of according to the short diameter. It was then readily extracted by slight lateral movements, tending to the direction of the axis of the prostate gland. The finger was then passed into the bladder, and discovered another stone, smaller than the first, which was at once seized and extracted.

Not more than two ounces of blood were lost in the operation; and the time occupied was three or four minutes; but not being in the habit of measuring time by the watch in these cases, the precise duration is unknown. The patient being loosened from confinement, seemed to be very happy; and after being placed in his bed, said that he had not been so easy for the two last years. The largest stone was of a pyriform shape, and measured one inch and a half in length, by one in width, and weighed nine drachms, nine grains: the smaller was of a cubical form, about three-fourths of an inch in diameter, and weighed three drachms, thirty-six grains:—the whole weight being twelve drachms and forty-five grains. They were both composed of the phosphate of lime.

The subsequent symptoms were so very mild as scarcely to require any record. He had hardly any acceleration of the pulse, pain, heat or other marks of inflammation: he slept well, in consequence of the great relief from pain he had experienced. At the end of a week he was directed to rise in bed, which, from habits of long inactivity, he was very reluctant to do; at the end of a fortnight he was allowed solid food, and directed to get out of bed.

Shortly after this, perceiving a white covering to the wound, I passed the finger into it, and discovered that the whole of it was lined with a calcareous incrustation, consisting apparently of phosphate of lime. Cloths, moistened with diluted muriatic acid, were then applied within the wound; the patient was also directed to take the same acid internally as freely as he could. The calcareous appearances soon afterwards went off, and the wound contracted to about the size of a quill. A catheter was now introduced into the bladder, and met with a slight obstruction in the prostate gland, which was readily overcome. This instrument was afterwards used daily, and sometimes retained for a short period: the wound was also directed to be touched daily with the nitrate of silver.

On the 31st of March, the patient was, by his own request, discharged, and went home to his family; the wound had not entirely closed, but was in a favourable condition.

Remarks.—The operation of lithotomy, according to the method of Celsus, has been rarely done in Great Britain, or in this country.* It presents

* I call this the method of Celsus, but it is, in fact, a variation from his method so considerable as almost to amount to a different operation. The operation of Celsus was performed without a staff or sound; his crescentic incision of the skin had its horns or extremities pointing forwards towards the thighs, "*cornibus ad coxas paulum spectantibus*," (Cels. Lib. vii. sec. xxvi.) instead of backwards towards the tuberosities of the ischia. Again, by his method the bladder was penetrated at its neck, without touching

some advantages, which are well worthy the consideration of those who may have occasion to perform the operation of lithotomy. These advantages appear to be:—

First, that the parts cut are more simple in structure than those concerned in the lateral operation: the nerves and the blood-vessels are necessarily smaller as they approach the median line.

Secondly, the pain and hemorrhage are, consequently, less than in the lateral operation.

Thirdly, the access to the membranous part of the urethra, and to the bladder is more direct.

Fourthly, the prostate gland being more completely exposed, may be divided with more precision.

Fifthly, the opening into the bladder may be double the size of that made in the lateral operation, without increasing the danger of cutting the vesical plexus of veins, the prostatic fascia, or the internal pudic artery.

Sixthly, the danger of subsequent inflammation is decidedly less.

The principal objection to this operation is the risk of wounding the rectum. This is certainly very considerable: but by drawing the staff with the urethra and prostate gland, towards the symphysis pubis, and with the finger of the left hand upon or in the rectum, drawing that intestine in the direction of the os sacrum, this danger will be found less, perhaps, than in the lateral operation. It may be objected, that in the present case, the wound was longer in healing than it frequently is after the lateral operation. The reason of this, however, is to be found, not in the form and direction of the wound, or in the parts implicated, but in the morbid state of these parts, and general condition of the patient, previous to the operation.

Although I should certainly not feel justified in recommending this operation for general use, from the experience of a single case, yet so far as this experience extends, aided by the light afforded by many dissections, made with the view to this subject, I should feel disposed to employ this in most cases where lithotomy was required, in preference to the lateral operation.

Since the occurrence of this case, another has presented itself, which I shall now proceed to relate.

CASE II.—*Nov. 6th, 1843.* Matthew Ryan, aged 14, a native of Halifax, Nova Scotia, has been affected for five years with signs of stone in the the membranous part of the urethra: this would, of course, endanger the incision of the vasa deferentia and vesiculæ seminales. The method, originally proposed by Celsus, was improved by Paulus Ægineta, and afterwards essentially altered by Heister. But in its present form, and that employed by me, it was originally proposed by that accomplished gentleman, and eminent professor of the Parisian School of Medicine, M. Ribes, who described his plan to Chaussier, without publishing it at the time. Dupuytren, who was at one time colleague of Chaussier, afterwards adopted the operation, almost exactly, as proposed by Ribes, actually performed and introduced it into practice, as more eligible than the lateral operation. He also illustrated it by descriptions and engravings, which gave a scientific character and stability to the operation it had not before possessed.

bladder. During this period, he has been occasionally sounded by medical men, and the existence of a calculus made certain. He is of small size, having the appearance of a boy seven or eight years old: the development of his body has been retarded, apparently, by the severity of pain he has suffered. The organs of generation are particularly small. He has now frequent inclination to pass urine, but does so in very small quantities, and not in a stream, except after a dose of oil: there is constant dribbling.

On sounding the boy, a stone was readily struck, as soon as the instrument entered the bladder: the play of the sound was, however, so small as to lead to the opinion that the bladder was very much contracted. The stone, as far as could be judged by the sound, was hard, and an examination by the rectum showed it to be nearly an inch in length, and almost as much in thickness.

The existence of a stone having thus been satisfactorily settled, it was next to be considered, what mode of relieving the patient was proper to be adopted. The operation of lithotrity naturally presented itself, in the first instance, but the bladder being very small, and the urethra narrow, there was danger that the stone could not be broken without injuring the bladder, and that if it were broken, of which there was some doubt, on account of its hardness, the urethra was too small to give issue to the fragments. These circumstances led to the rejection of lithotrity: it was, therefore, determined to perform the operation of lithotomy, as soon as the boy became accustomed to the atmosphere of the hospital.*

After the boy had been in the Massachusetts General Hospital about

* A somewhat similar case occurred in the Hospital Necker, in Paris, in May, 1838. The distinguished lithotritist and author, Mons. Civiale, carried me at this period to see a patient of his in the Hospital Necker. The patient was a boy 14 years old, with the appearance of the age of six or seven years. Mons. Civiale found a stone of considerable size in his bladder, and by the lithotripter readily crushed it. On the day following, he again carried me to see him, informing me that the boy was very ill.

When we arrived at the hospital, we met there Mons. Bérard, the younger, one of the able surgeons of that hospital. On examining the boy, together, we found him with a pulse of 130, suffering great pain in the right flank, and a retention of urine. Mons. Bérard seemed to be of opinion, that the symptoms arose from inflammation in the right kidney, that the patient would succumb, and that no operation would save his life. Mons. Civiale thought the symptoms arose from a portion of calculus impacted in the membranous part of the urethra; he thought the operation of lithotomy might, under these circumstances, afford relief. Mons. Civiale then did me the honour of asking my opinion. It appeared to me, that the operation of lithotomy might, and probably would, afford relief: that if it were true the kidney and the bladder were in a state of inflammation, the operation would not be injurious, but, in consequence of the blood abstracted, it might be beneficial.

The patient was then ordered on the table, and Mons. Bérard declining to operate, the operation was performed in the lateral method by Mons. Civiale, and fragments of stone were extracted to the amount of about a quarter of an ounce. The boy was carried to bed in a state of comparative ease; on the next day he was in a comfortable condition; the following day I left Paris, and never heard the final result of this case.

a fortnight, the operation of lithotomy was performed. The preparatory arrangements were as follows. The boy was directed to take his usual food till the day before the operation; every evening he had an enema of thirty drops of the tincture of opium in a little warm water, to relieve his pain. On the day previous to the operation, he took a small dose of castor oil: three hours before he had a common enema, and thirty drops of laudanum by the mouth: a ribbon was applied around the penis, and the patient carefully watched to prevent his discharging his urine.

The patient being placed on the table, his hands and feet were bound together, and the rectum was examined, to ascertain if it were free from fæces. A staff was then introduced, and the stone immediately struck: the instrument was then put into the hands of an assistant. The skin of the perinæum being made tense by the thumb and forefinger of the left hand, an incision of two inches was carried across the perinæum, midway between the scrotum and the anus, of a crescentic form, the points of the crescent looking towards the tuberosities of the ischia. The superficial fascia was next divided. The assistant was then requested to draw the instrument upwards, or towards the symphysis pubis, to make room between the urethra and rectum. By two cuts, the membranous part of the urethra was exposed behind the bulb, and laid open: the bulb itself not being uncovered.

A straight probed bistoury, having a blade two inches long, was then pushed into the groove in the staff, and the operator was about to pass it into the bladder, when the patient drew back, and thus separated the two instruments. By means of the forefinger of the left hand, passed into the groove of the staff, the probe-pointed knife was readily restored to its situation in the groove, and then the operator, taking the handle of the staff in his left hand, and bringing it downwards, the knife passed along the groove into the bladder. No urine was discharged then, or at any period of the operation, except when the staff was introduced, at which time the little that had been secreted made its escape. Then striking the stone with the end of the probe-pointed knife, to ascertain its entrance into the bladder, the staff was withdrawn.

The forefinger of the left hand was next passed along the back of the knife, and served to guide its incision, which was made very small, at first on the left, and then on the right side of the prostate. The forefinger following the knife was applied in search of the stone, but not coming in immediate contact with it, and knowing the stone could be instantly found by the rectum, I introduced the finger into the intestine, and pushed up the stone towards the wound. Having enlarged the opening with a common knife, I pushed the stone directly through the wound thus made, and extracted it without the aid of the forceps. The opening of the bladder was, of course, the smallest possible, and barely allowed the stone to pass through. The loss of blood was very small: the operation ended, the patient was carried to his bed.

In the afternoon he had some pain, and being much accustomed to the

use of opium, thirty drops of M. Munn's Elixir were given to relieve him. In the evening, five ounces of blood were drawn from the arm, as a preventive of inflammation; a precautionary measure I am in the habit of adopting after capital operations, in which there has been no great loss of blood.

On the next day, the boy was quite comfortable. A pledget introduced into the wound after the operation having come out, another was passed to the bottom of the wound; the urine having issued as much by the penis as by the wound.

No remarkable changes occurred afterwards: the pulse gradually sunk to ninety; the urine resumed its natural course, and the boy's appetite became quite outrageous, before he could with safety be indulged with food. In a week after the operation, he had half a pint of broth a day, on the tenth day some bread, and was allowed to sit up, and walk around.

On the fifteenth day, the urine had ceased to pass through the wound, and issued altogether through the urethra. The patient had already a control over it, which he had not enjoyed for many years. The wound, being free from the irritation of urine, was contracting and cicatrizing rapidly.

Dec. 18th, 1843. His mother having reported that he had been unable to pass his urine, and that he frequently pulled at the præputium, led me to introduce a sound into the bladder, which passed readily, and encountered nothing extraordinary. The finger being introduced into the rectum, the bladder was distinctly felt in its normal state. He was ordered a dose of *oleum ricini*, and a diminution of food: it being thought likely the pain he had experienced was colic, and that his pulling the prepuce, when he felt the pain, was the effect of habit.

On the 14th, as he represented that his pain still continued, I introduced the sound again, and ascertained, that the bladder contained no extraneous substance: this was also done, at my request, by the house-surgeon. I was then led to suspect some trouble in the cavity of the abdomen, especially on learning that he had eaten extravagantly, and of pernicious articles of food, which had been given him by some person unknown.

On examination of the abdomen, I found it tumid, tender; his appetite had failed; his pulse had quickened to 130. His bowels were again cleansed by castor oil, a sinapism was applied to the epigastric region, and mild enemata used occasionally: he was also restricted to the use of water.

On the 15th, the symptoms continuing much the same, although there was a very free discharge of urine in his bed, he was ordered a solution of the tartrate of antimony, to be taken in nauseating doses. This I preferred to bleeding by the arm, or leeches, on account of the debilitating effect produced by the abstraction of blood, immediately after the operation, and its terrifying influence on this boy's mind.

Dec. 18th. The appearances are quite favourable: the appetite is returning; he is able to pass the urine in a vessel. The urine, tested by litmus paper, was found to be acid.

Dec. 28th. He is now quite well, passes his urine naturally in every

respect, and no longer has involuntary discharges of it during his sleep. He proposes to return to Halifax on the first of January, 1844.

Remarks.—The result of this case confirms the favourable opinion made by the preceding. The simplicity of the operation, the comparatively small pain from the incisions, the facility of seizing and removing the stone, the very slight loss of blood, and the absence of any severe consecutive symptoms, are facts which concur in giving a favourable impression as to this mode of operating. Whether the results of a considerable number of cases would be equally favourable, cannot be determined but by a long series of trials.

Lithotrity in the Female.

The lithotritic operation in the female is generally considered to be one of great facility, and the anatomy of the organs concerned certainly favours this opinion. Having had occasion to resort to this operation two or three times, I found it less easy than I had expected. A principal difficulty, encountered in cases which I have treated, arose from excessive sensibility of the bladder, which could not be obviated by narcotics of every description, applied in every possible mode. In doing these operations, I experienced some inconvenience from the want of sufficiently minute descriptions of the mode of performing it, and of the circumstances attending it. With the hope that those who may have occasion to employ it, may derive advantage from the publication of such details, I shall venture to give one of these cases with all its minutiae.

CASE.—Mrs. —, a lady about 50 years of age, applied to me in the month of May, 1840. She informed me that she was affected with a dull, constant pain in the right lumbar region; this pain, though not acute, was of a distressing nature, being accompanied by a sense of weight or pressure. Occasionally, she experienced numbness in the side, extending into the corresponding limb, without, however, affecting the feeling or the motion of this limb. The flow of urine was generally free, and even more frequent than natural, appearing, at times, to be connected with a pain in the right side of the abdomen; its appearance to the eye was healthy. The other functions, at the time I saw her, were in the natural state.

She also informed me that three years before, she had an attack of violent pain in the right lumbar region, which, after a paroxysm of two days duration, terminated in the discharge from the bladder of a calculous concretion: this, I afterwards learned, was probably composed of the ammoniaco-magnesian phosphate. Since that period of time, she had had some similar paroxysms, but without passing any more calculi.

Concluding, from the history, that this lady was affected with calculous concretions in the pelvis of the kidney, I recommended her what I had used with remarkable advantage, the bicarbonate of potassa, to the amount of

three drachms in the day, which was continued for three or four weeks. At the same time, blisters were applied frequently to the back, the bowels were kept open, and the warm bath was used every five or six days. Under this treatment she became more easy, and felt, at first, very confident of being essentially better; but after a while, as she ceased to improve, I desired to examine the affected part, and, on making pressure immediately below the ribs of the right side, near the spine in the region of the kidney, I perceived a slight induration. Pressure upon this part produced some uneasiness, and a sense of numbness through the corresponding limb. Finding, as already stated, that the case was not essentially improved, I then advised the use of the diluted sulphuric acid, mixed in a confection, and taken as largely as she could bear. This was continued three or four weeks without any decided effect, with the exception of a cloud in the urine, which did not appear when the acid was not employed. I therefore advised her return to the bicarbonate of potassa, which was continued for the remainder of the summer, about three months.

During the latter part of this summer, 1840, she began to be affected with paroxysms of pain in the right side, thence shooting down the right side of the abdomen, and through the right lower extremity. To mitigate these, I advised the following course whenever they occurred; first, hot fomentations of the decoction of poppies to the right lumbar and iliac regions; secondly, large enemata of warm water, containing a drachm of the tincture of opium; thirdly, the warm bath. These applications, with some minor auxiliaries, generally relieved her in a few hours, leaving her, however, very ill from the effects of the opium.

In the latter part of the autumn, after one of these paroxysms, she felt, as she thought, something descend into the bladder; this was soon followed by some pain in the region of that organ, and occasional interruptions to the urinary discharge, the urine having now become offensive. These symptoms making it nearly certain that a stone had passed into the bladder, I requested to sound the patient, and on doing this, I soon detected the stone, which was of small size. Previously to introducing the sound, I injected some warm water, in order to enable me to examine the bladder, with less interference to the coats of that organ. This fluid was retained for an hour, and when it passed off, it was immediately followed by a substance which filled the urethra, and produced considerable pain in the passage. I was sent for again to visit the patient, and having introduced a probe, detected a stone wedged in, filling the urethra. I endeavoured to extract this by a small pair of forceps, but found they could not be passed so as to embrace the stone; I then took a strong curette, and introduced it between the stone and the upper part of the urethra, with the forefinger of the left hand pressed on the internal part of the stone, and thus confined the stone in the passage, so as to prevent it from being pushed back by the curette. By these means I was enabled to insinuate the instrument beyond and behind the stone, and

thus, by the curette in the urethra and the forefinger of the left hand on the outside of this canal, the stone was gradually brought to the meatus, where it experienced a decided opposition. The curette was now withdrawn, the forefinger of the left hand continuing to press the stone to the meatus; the forefinger of the right hand was employed to push the meatus back upon the stone, thus uncovering its extremity. The stone was thus sufficiently exposed to be seized by the forceps and withdrawn, to the great relief of the patient. This calculus was an inch and a half in length, and half an inch in diameter; it was somewhat rough on its surface, and was found, by Dr. Gay, who analyzed a part of it, to be composed of the phosphate and carbonate of lime. She bore the operation with great firmness, and on the following day was free from any material uneasiness; she had a perfect urinary evacuation, and was gratified with the hope of freedom from sufferings under which she had so long laboured.

This agreeable calm was of short duration. Three days after my extraction of this calculus, the patient informed me that she had symptoms of another stone. These symptoms gradually became more distinct, till they assumed a character perfectly decisive; she had frequent inclination to pass water, accompanied with pain in its passage, particularly towards the latter part, sometimes a sudden interruption to its flow; the colour was that of blood, with a mixture of mucus, and there was a sensible movement of the stone when she turned over in bed. As the injection of warm water had been followed by a favourable result, I repeated it, but without the same success as on the previous trial.

It now appeared necessary to adopt some decided measures for the removal of the calculus, and I therefore presented to my patient the different modes of operating adapted to this object. I explained to her the mode of extraction by dilating the urethra by bougies, by sponge and by the urethral dilator; secondly, by the operation of lithotrity; thirdly, by lithotomy. After some consideration, she agreed to the introduction of the instrument of Heurteloup; but, on repeated trials with this instrument, I found that such was the size of the bladder and the number of plicæ or folds into which its mucous membrane was rolled, when in the contracted state, that it was impossible to seize the stone without the patient's assuming a posture more favourable to the use of the instrument, and the necessary aid of professional persons. I attempted to obviate the difficulty by the previous injection of warm water, but this could not be retained long enough to allow me to make use of the instrument.

The patient now requested me to intermit my efforts, and permit her to employ the specific of Dr. Lee, and to this I readily agreed. The pills of Dr. Lee were taken, and in a few days their effect upon the urine was very remarkable; large quantities of a sandy substance began to appear in the urine, and continued to increase till she had passed two or three drachms in the course of the twenty-four hours. This substance was of a gray colour,

capable of being readily reduced to a fine soft powder, possessing a slightly saline and urinous taste, and was found to be composed of the phosphate of ammonia and magnesia, and some phosphate and carbonate of lime. This deposit continued daily in greater or less quantity, for four weeks, at which time I sounded to ascertain the condition of the stone, and had reason to believe it increased in size, and covered with a rough coating. Presuming that the lithontriptic pills had caused this copious deposit from the urine, I was apprehensive that their effect had been, and would continue to be, to increase the size of the calculus, and, therefore, advised the discontinuance of the medicine.*

The paroxysms of pain, the bloody and mucous discharge with the urine, the frequent interruption of the passage of this fluid by the obstructing calculus, and a general state of debility and difficulty of motion, made it necessary to adopt some measures calculated to remove the stone. At this period the patient was compelled to lie in bed the greater part of the time; she very rarely sat up; her appetite was much diminished; she was obliged to resort to opiates, by enemata or the mouth, and was unable to turn in bed without considerable suffering.

The patient now decided in favour of an attempt to remove the stone by dilating the urethra, and after once or twice using very large bougies, and finding the dilatation could not be accomplished in that way; inferring, also, from the inability of the patient to bear long continued pressure upon the urethra, that the use of the sponge would, probably, be impracticable, I employed the urethral dilator of Weiss, and, after two or three applications, succeeded in dilating to No. 6, as marked by the index of that instrument. I was now enabled to introduce my little finger, so that the point of it entered the cavity of the bladder, and felt great hopes that, after one or two more trials, I should be able to dilate the urethra sufficiently to withdraw the stone entire. But, notwithstanding the courage of my patient, the sensibility produced by the dilatation was so great as to render her unable to bear the further use of the instrument, and it became absolutely necessary to desist from all operations, except those calculated to sooth her pain.

After allowing some time for the patient to recruit, it became a subject of consideration, whether she would submit to the operation of lithotrity or lithotomy. The operation of lithotrity, I assured her, might be employed with almost certain success, but that the time required for its consummation might be considerable; I was also able to assure her that this operation would not be attended with any danger. On the other hand, the operation

* In the case of another lady, a patient of mine, who employed Dr. Lee's lithontriptic pills, the patient was relieved soon after she began to take them, was ultimately cured, and I believe now continues well at the end of a year. The calculi consisted, in the case of this lady, of a great number of lobular stones, each about double the size of a pea, and composed of white carbonate of lime. This lady had employed the alkaline carbonates, before mentioned, and also sulphuric acid without benefit.

of lithotomy, would, undoubtedly, relieve her immediately from her state of suffering, but could not be said to be wholly free from danger.

She wished to know how the operation of lithotomy would be performed, and I endeavoured to explain to her that I should prefer, in her case, the method which had been adopted by my respected instructor, Baron Dubois, by an incision from the superior and anterior part of the urethra towards the symphysis pubis. An incision in this direction, I thought, would give sufficient room for the extraction of a stone of so comparatively moderate a size as hers; for I judged the stone to be about two inches long, and not more than half an inch in diameter. The lateral operation, between the vagina and the ramus of the pubis, I judged, could not be readily done without wounding the vagina, as, the lady having had a number of children, this passage lay close to the bone. In order to aid her in making up her decision between the two operations proposed, she desired a consultation with Dr. Miller, a distinguished surgeon, and Dr. Wing, a near relative; both of them, after due consideration of the circumstances, agreed to recommend the operation of lithotrity, which was assented to, and thereupon commenced.

The patient being placed on a table, about three feet and a half high, supported by the two gentlemen above mentioned, with the aid of Dr. Mason Warren, I first injected the bladder with warm water. I next introduced the brise-pierre, of Heurteloup, and bringing the instrument to an angle of about 50° with the trunk of the body, readily struck the stone in the fundus of the bladder, on the right side of the vagina; then, opening the instrument, caught the stone and crushed it by the screw. The apparatus was now withdrawn, with as large a portion of the stone as I thought would pass through the urethra; some portions of calculus were discharged after the operation; the patient suffered very little.

These proceedings were resumed in two days after, and continued at about the same intervals, until seven sittings had been completed; in each of these, the stone was found with very little difficulty, was crushed, portions extracted, and other portions washed away afterwards by the urinary evacuations. In these operations, the brise-pierre of Heurteloup, the ramaseur de gravier of Civiale, and a shorter brise-pierre, adapted more particularly to the anatomy of the female, which was contrived by Dr. Mason Warren, were employed. On the eighth sitting, there was discovered the slight remains of a calculus, but so small, and so involved in the folds of the mucous membrane of the bladder, that it was impossible to seize it by any instrument, without seizing along with it the mucous coat. After reiterated attempts to remove it by injections, finding that this relic could no longer be felt by the instrument, employed in the most careful manner, I desisted from all further treatment.

From this time the patient was relieved from all her sufferings; the urine flowed in a perfectly natural manner, without interruption, her strength recruited, and, after a winter's confinement, she was enabled, in the spring of

1841, to leave her house and go into the country. No further calculi, nor fragments of them, have since appeared, nor has the patient had any symptoms of calculus, with the exception of a sense of weight in the fundus of the bladder, and a want of perfect contraction of this organ.

In the month of July, 1844, I made this lady a visit. I found her surprisingly recruited; she had recovered the freshness and embonpoint which she formerly possessed. Her strength was fully equal to what it had been previous to her first attack, and was sufficient to allow her to take a part in the most active domestic avocations. She had no trouble whatever remaining in the urinary organs. She, of course, felt very much gratified with the relief she had obtained from the lithotritic operations.

Remarks.—The facts most worthy of notice in this case, are the following:

First, Symptoms of renal calculus, viz.: sensibility in the lumbar region, numbness in the corresponding thigh, and the occurrence of severe paroxysms of pain in the right side of the abdomen.

Second, The sudden cessation of these symptoms on the dropping of the stone from the ureter into the bladder.

Third, Signs of stone in the bladder, viz.: pain in that region, especially on motion, the discharge of offensive urine, mixed with mucus and blood, and the sudden suspension of the flow of urine.

Fourth, The lodgment of a calculus in the urethra, when small enough to enter but too large to pass through this canal; and the retention in the bladder of a calculus too large to enter the urethra.

Fifth, The excessive sensibility of the meatus, preventing its dilatation beyond a certain extent.

Sixth, The excessive sensibility of the inner coat of the bladder on the introduction of instruments and even of water, and, in consequence, the impossibility of retaining a sufficient quantity of water in the bladder to distend it.

Seventh, The consequent occurrence of folds, (plicæ,) in the mucous membrane of the bladder, which involved the stone and prevented it from being seized by the instrument without including the mucous membrane; this constitutes the greatest difficulty in the operation of lithotrity in the female.

Eighth, The uniform position of the calculus in that part of the bladder lying on the right of the vagina, and attainable by the instrument when placed at an angle of 50° , formed between the instrument and the perpendicular line of the body.

Ninth, The curious deposit in the urine from the use of the lithontriptic pills.

Tenth, The perfect restoration of the patient's health and vigour, after all her sufferings from disease and operations.

Boston, Aug. 10th, 1844.

ART. II.—*Practical Observations on Organic Obstructions of the Œsophagus; preceded by a case which called for Œsophagotomy and subsequent opening of the Trachea; with accompanying illustrations.* By JOHN WATSON, M.D., Surgeon to the New York Hospital.

MR. John Ames, of Easton, Massachusetts, aged 24, of tall and spare habit, previously in the enjoyment of moderate health, was seized in the latter part of October, 1843, with a cough, which lasted for a week or two, and left him, about the first of November, with marked difficulty of deglutition. Having always had what he called a narrow swallow, and being subject to frequent turns of choking, he did not at first pay much attention to the present difficulty. But it soon became more serious, obliging him frequently to leave the table while eating, and, at length, to eat by himself, and with the utmost caution.

He consulted a surgeon of Boston, sometime during November, who recommended the occasional introduction of a probang, the application of a blister to the throat, and daily inunction with hydriodate of potassa ointment around the neck. This course was followed for a few weeks, without relief. About the 1st of January, 1844, the difficulty had so far increased, that he was obliged to relinquish the use of solid food, and to subsist wholly on soft and fluid substances. He came to New York about the middle of January, and the surgeon whom he first consulted here, thought he was enabled to pass an ordinary urethral catheter below the seat of obstruction in the throat.

The patient came under my care on the 19th of January. At that date it was utterly impossible to pass an instrument of any size beyond the point of stricture. A gum-elastic catheter, introduced by the mouth, came in contact with the obstruction, at the distance of seven inches from the edge of the front teeth of the upper jaw. The patient was living entirely on fluids. He was free from cough, he had no pains of any sort, no soreness or tenderness about the throat either from pressure or from attempting to swallow. He was evidently emaciated and enfeebled; he had a frequent and copious flow of saliva and mucus from the mouth, probably in consequence of the obstruction to the passage of these fluids downwards. The thyroid bodies were larger than usual, and one or two lymphatic glandular swellings existed on either side of the throat, just below the angles of the jaw. The fauces were free from inflammation, the tonsils were not enlarged. The epiglottis could be fairly brought into view by depressing the tongue; but every thing about the fauces, within the range of vision or within the reach of the finger, was perfectly healthy. The patient had never before suffered from any severe illness. He was one of a numerous family, none of whom were subject to any serious disorder. He had, however, always been rather delicate. His mother had for years supposed he was of a scrofulous diathesis.

He had once had an obstinate sore on his chin, which gave rise to this opinion.

At my first visit, I put him on the use of hydriodate of potassa, grs. v. in solution, three times a day. I directed a blister to be applied on each side of the neck; and as he could swallow only fluids, advised a diet of milk. The blisters were kept open about ten days; and in the mean time I frequently attempted to get an *œsophagus bougie* beyond the stricture, introducing it sometimes through the mouth, sometimes through the nostrils; sometimes passing a large hollow instrument down to the obstruction, and leaving it there for an hour together; or passing a smaller instrument through the larger one; but all without success. At times the instrument appeared to clear the stricture and pass onwards; but, on withdrawing it, I invariably found that this apparent success depended on a doubling of the extremity of the bougie.

Failing with simple bougies and catheters, on the 27th of January I passed an armed bougie, through a hollow catheter, down to the stricture, and allowed a piece of lunar caustic, about the size of a pin's head, to melt at the seat of obstruction. This caused some soreness, but did no good. The caustic application was repeated on the day following. It appeared rather to aggravate than to relieve the difficulty.

With a view to an operation for getting into the *œsophagus*, beyond the stricture, I now requested a consultation. The patient was accordingly seen, first, by Dr. Stevens, then by Drs. Rodgers, Hoffman and Post; all of whom expressed their conviction as to the necessity of the measure, the obstruction being now so great that the patient was unable to say whether any portion of his fluid food actually passed into the stomach or not.

On the 2d of February, wishing to delay the operation until the arrival of his friends from the country, he was obliged to resort to nutritive injections. For the ten succeeding days, these were statedly administered through a long gum-elastic tube passed into the colon. They consisted of beef tea, broth containing boiled flour, boiled starch and arrow-root, boiled eggs, and such other articles as could be administered. The injections had a marked effect in recruiting his strength and in assuaging the sense of hunger. They increased the volume of the pulse and the fulness of the capillary vessels. But at times they excited tormina; and, occasionally, they purged him, especially when they chanced to be too highly seasoned with salt.

Feb. 12th. The patient had all the morning been suffering from tormina; his pulse was feeble, ranging at 120; but he was otherwise in a favourable condition. I commenced the operation about one o'clock, P. M., assisted by Drs. Stevens, Rodgers, Hoffman, Post and Buck, in the presence of several of my own students, and a few of the friends of the patient. Having previously placed him on a cot near a window, with his back well supported by pillows, and his head thrown gently backwards, I commenced the first incision on the left side of the neck, midway between the *os hyoides* and

the upper border of the thyroid cartilage, just in front of the sterno-mastoid muscle; carrying it downwards parallel with the edge of this muscle to within an inch of the sterno-clavicular articulation; dividing, in this course, the skin, superficial fascia and platysma-myoides muscle. A second incision, of an inch in length, was made nearly parallel with the upper edge of the thyroid cartilage, terminating posteriorly at the upper extremity of the first, and extending to the same depth. After turning up the flap of integument at the angle of these cuts, a glandular tumour, about the size of a hazelnut, was exposed and removed from among the layers of the deep fascia. It was found to be very hard, and to contain yellowish concrete pus in its centre. The dissection was then continued through the deep fascia. The omo-hyoid muscle was exposed and divided; the superior thyroid artery was brought into view, secured by two ligatures and divided between these. The loose cellular tissue between the main cervical vessels and nerves on the one hand, and the trachea, &c., on the other, was next separated, mostly by the handle of the scalpel, until the lower part of the pharynx and a portion of the œsophagus were fairly exposed. This muscular structure was put upon the stretch at every attempt of the patient to swallow. The finger could now be passed between the œsophagus and the anterior face of the spinal column; and the pulsations of the right carotid could be seen and felt through this space, by slightly elevating and rotating the larynx and œsophagus. The edges of the wound were now well dilated by curved spatulas. I next attempted to seize and puncture the wall of the pharynx, about an inch below the corner of the thyroid cartilage; but, owing to the yielding nature of its muscular texture, I found great difficulty in doing this without endangering the important structures in the neighbourhood. In order to steady the parts, I was finally obliged to introduce a silver catheter through the mouth on towards the stricture, and to cut upon the point of this instrument. On opening the gullet, I found the seat of obstruction just below the incision, and within reach of the point of the finger. But in order to divide it without risking any injury to the ascending thyroid artery, I was obliged to reach it from without. For which purpose, and in order to give more room at the bottom of the wound, I divided the sterno-mastoid muscle transversely, and turned down the upper border of the thyroid gland. In this process the recurrent nerve was brought into view; and one of the branches of the superior thyroid artery, as it entered the gland, was divided, giving rise to the only hemorrhage worth speaking of during the operation. The vessel was soon secured; and, after much difficulty and delay, the division of the strictured portion of the œsophagus was finally effected by an incision through its walls of at least an inch and a half in length. The obstruction, so far as I could judge at the time, appeared to depend upon a simple induration and contraction not over five or six lines wide. The surface of the œsophagus within appeared to be smooth and of its natural colour. A full

sized stomach tube was now introduced through the wound; and a glass of wine, and afterwards a full meal of boiled arrow-root, were administered.

The patient bore the operation with uncommon fortitude. After its completion, he informed me that the pain of the incisions was trifling to that produced by the fingers and the curved spatulas used in dilating the wound. After a few moments repose, the transverse portion of the external wound was drawn together by a single suture; the rest of the wound was allowed to remain open. The stomach tube was not removed from the *œsophagus*; but its free extremity was secured to the side of the head, to prevent it from slipping inwards.

On the following day the patient was free from fever, his pulse was less frequent than on the morning of the operation; his voice was slightly altered by the pressure of the tube or the tumefaction caused by the operation; but he had no difficulty of breathing. The saliva was issuing freely through the wound. No serious symptoms followed the operation. The tube was not disturbed until the end of the sixth day. It was then withdrawn, and another introduced through the left nostril. After this the wound was dressed with adhesive straps and compress, so as to favour cicatrization.

The second tube, which was about an inch and an eighth in circumference, at first gave him some uneasiness, slightly affecting the left eye and causing some hemorrhage from the nose; but these unpleasant symptoms subsided in a few days, after which the patient began to improve rapidly. This second tube was worn twenty-five days. Towards the close of this period it became rather offensive, and produced an unpleasant taste in the mouth. It was removed on the 15th of March, and a fresh instrument of the same size immediately introduced. The wound in the neck had now contracted to a mere line, and the fistulous opening into the *œsophagus* would scarcely admit a probe. The patient, of late, had been walking about the house, and, with the exception of one or two turns of indigestion from overloading his stomach, he had not had a bad symptom. He has not, however, gained much flesh; he is rather feeble, and his pulse ranges at 100.

March 31st. For some days past he has complained of soreness in the throat; he has raised much phlegm, and occasionally small streaks of blood; his respiration is somewhat oppressed, particularly at night. About a week since he had a slight swelling on the right side of the neck, which subsided under the application of a tobacco poultice. The present difficulty has not yielded either to this or to the use of anodynes. I was obliged to remove the tube from the nostril. It had been worn, since the last insertion, just sixteen days, and nearly seven weeks altogether.

April 1st. The removal of the tube has not afforded much relief. The respiration is still embarrassed. He attempted to swallow some wine and water; but the effort brought on violent coughing, laboured breathing and other symptoms analogous to those of *œdema* of the glottis. The right side

of the neck was somewhat swollen. An enlarged lymphatic gland could be felt just below the angle of the jaw, connected with a line of induration, apparently from diseased lymphatics, extending from the jaw towards it. Pressure on this side of the neck gave him pain. An attempt was made to re-insert the tube. The effort produced the most violent spasm of the laryngeal muscles, and threatened suffocation. Unable, for the present, to restore the passage through the mouth or nostril, and unwilling to tear open the already cicatrized wound in the neck, I resorted, for a few days, again, to the nutritive injections; hoping, in the interval, that the disease in the larynx might be so far relieved as to allow the tube to pass beyond the fauces. To favour this, I had the neck penciled freely with concentrated tincture of iodine. I put the patient on anodyne inhalations and fumigations of stramonium and cinnabar, five grains of cinnabar to a pipeful of powdered stramonium leaves, to be smoked every four hours. After a day or two, the stramonium appearing to irritate the tongue, common tobacco was substituted for it.

April 7th. The respiration is much improved; the pulse at 88; the swelling on the right side of the neck has subsided; the integuments are sore from the action of the iodine. Since last report, there has been some slight inflammation about the fauces, which has been mitigated by holding ice in the mouth. This, as it melted, passed downwards without troubling him. He is apparently losing strength for want of food in the stomach, although he makes no complaint of hunger. Another attempt was made to insert the œsophagus tube. It passed beyond the larynx without difficulty, but was arrested somewhat lower down. I was now obliged to break open the recent cicatrix in the neck, with the point of a probe, near the centre of the original cut; and to pass a very small gum elastic catheter obliquely downwards, through the opening thus made, into the œsophagus. With my own mouth, by means of this small tube, I forced about a pint of prepared arrow root, with a small quantity of wine, into the patient's stomach. The tube was then withdrawn; and, without much effort, I immediately afterwards introduced, through the same opening, a gum elastic catheter, only one size smaller than the large tubes which he had previously worn. After having his stomach supplied with food, his strength returned to him almost miraculously. He at once got up, dressed himself and walked down stairs. In the evening I found him at the fireside, smoking his pipe of cinnabar and tobacco; his pulse fuller than before, and ranging at 100.

After this period, I had no difficulty in supplying the stomach with sufficient food. On one or two occasions there was slight obstruction to the introduction of the tube, owing, perhaps, to the position of the neck at the time; but this was readily overcome by a little careful manipulation. The tube was never afterwards allowed to rest in the wound, but was removed immediately after every meal, and introduced anew, either by the patient

himself or some of his friends, whenever he wished to supply the stomach with food.

April 10th. He is so far restored as to be able to walk out. On the following day he rode out as far as Bloomingdale, a distance of several miles, and conversed much with his brother, who accompanied him. This rather imprudent exposure reinduced the difficulty of breathing. On the following morning, (April 12th,) his respiration was unusually laboured; he complained of soreness on the right side of the neck opposite the larynx. The parts here were tumefied. A large blister was applied over the swelling. This drew well without relieving him. In the afternoon suffocation was imminent: his lips were purplish, his countenance anxious, his face was bathed in clammy perspiration. I directed fumigations of burning resin, and left him to prepare for opening his trachea. I saw him again soon afterwards with Dr. Buck. The inhalation of the fumes of the burning resin appeared to have produced a favourable effect. His lips were again of their natural colour; and though his respiration was noisy and laboured, he was evidently in much less immediate danger. He had of late been using anodynes at night. I now administered fifty drops of laudanum, and directed the blistered surface to be dressed with mercurial ointment.

April 18th. He is again walking about the house. His breathing has steadily improved. The cinnabar fumigations and mercurial inunction to the neck, which have been continued to the present date, have not affected his gums.

April 24th. He changed his residence, and rode without fatigue about two miles. On the second day afterwards he again complained of slight difficulty of breathing. Several lymphatic glands, behind the upper part of each mastoid muscle, were slightly enlarged. The inunction and fumigations were continued, and a tobacco poultice was again applied with apparent benefit. The profuse discharge of phlegm and saliva, which has existed since the first onset of disease, still continues.

May 1st. Respiration is again impeded, and is nearly as difficult as on the 12th of April last. The right side of the neck is again swollen. A blister was applied on each side of the neck; absolute repose was enjoined; small doses of Dover's powder were frequently administered during the day, to act upon the skin; and a full anodyne was given at night. This course appeared again to check the threatened laryngeal obstruction. For a few days his breathing improved; but his strength had become much impaired.

May 8th. For the last thirty-six hours respiration has been much embarrassed. The introduction of the stomach-tube appears to-day, for the first time, to interfere with the breathing. With the assistance of Dr. Buck I opened the trachea. The operation consisted, first, in a longitudinal division of the integument and subjacent soft parts, including a section of the transverse portion of the thyroid bodies; secondly, in securing a few vessels and arresting all existing hemorrhage; finally, in dividing the cryco-thyroid

membrane transversely, and the crycoid cartilage longitudinally downwards through the median line, and continuing the incision through one or two of the upper rings of the trachea. The patient bore the operation well; and after the silver respirator was placed in the wound, he breathed through the instrument with perfect freedom. On the following day it was found necessary several times to remove the canula, to rid it of inspissated mucus, and at length to lay it aside, and to keep the sides of the wound expanded by two blunt hooks. For these, on the 10th, I substituted a couple of deep stitches with strong silk ligatures, one on each side; the outer ends of the ligatures being secured laterally to the sides of a circular wire about three inches in diameter, in such a way as to expand the wound and secure the wire permanently in front of the neck, as in the accompanying diagram. During the following night, notwithstanding this contrivance, the respiration became again obstructed by the accumulation of mucus, and by the overlapping of the lower part of the sides of the wound. The insertion of the canula was out of the question. I therefore substituted an extemporaneous dilator of bent wire, which I found to answer the purpose of keeping the wound well dilated, and of preventing the posterior face of the trachea from approximating the anterior. The accompanying figure* will give a sufficiently exact idea of the shape, and of the mode of applying this instrument, which was secured round the neck by a string.

FIG. I.

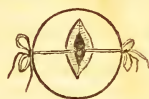
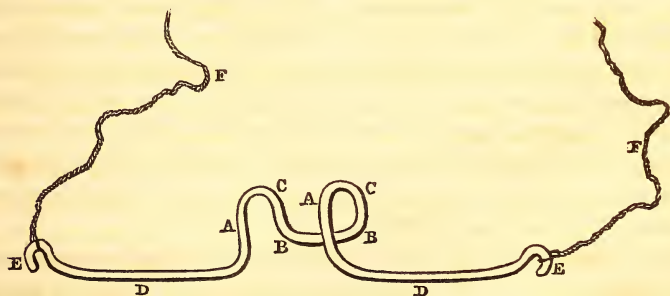


FIG. II.



* The foregoing figure represents a bent wire with a string attached to each extremity. The central curved portion being the part of the instrument for dilating the wound and expanding the trachea. The strings are used for securing the instrument in place, by tying them around the neck.

AA. The two sides that serve to expand the edges of the cut.

BC—BC. The portions of the wire that rest upon the posterior face of the trachea, and prevent it from falling forwards.

DD. The horizontal shafts of the wire passing laterally, and terminating in the loops EE, to which are attached the strings FF, for securing the instrument. These horizontal shafts may be much longer in proportion than they are here represented.

May 11th. The patient had passed a restless night. The lungs are apparently much congested. The patient requires to be continually fanned and to have the windows open. He is under the influence of a large anodyne, which was administered late last evening. His skin is cold, his lips pale and dry; his finger-nails and the lobes of the ears are of a purplish hue. These symptoms were relieved by resorting to wine and administering a full meal of prepared arrow-root. After this period stimulants and food in a fluid form were administered as freely as he could bear them, apparently with good effect. During the night of May 12th, he rested tolerably well; but early on the following morning, he had again sudden symptoms of collapse, in part owing to the influence of the anodyne taken on the previous evening. He was again relieved by stimulants. During the 13th he complained, for the first time, of pain in his left side. He had some cough; and the bronchial accumulations still continued to trouble him. During the evening his respiration was again easy; but in the course of the night a colliquative diarrhœa ensued. This reduced him rapidly. He expired early on the morning of the 14th of May, six days after the opening of the trachea.

The body was examined eight hours after death. The abdominal viscera were healthy. The right cavities of the heart contained a large fibrinous concretion. The lungs were unusually large and free from all traces of tubercles. The upper lobe of the right lung was healthy. A small portion of the lower and back part of the middle lobe and the greater part of the lower lobe were in a state of red hepatization. The bronchial tubes throughout this lung were of a deep red colour, and their mucous surface had a coarse muscular appearance. The accumulation of mucus was not very great. In the ultimate bronchial ramifications of the lower lobe, there were some appearances of purulent matter. The upper lobe of the left lung was also healthy, except at its lower border, which was slightly indurated. The lower lobe was hepatized, and the bronchial ramifications in this lobe contained a few detached masses of purulent matter. The left pleura was coated with a recent exudation of coagulable lymph. The lungs were not adherent to the chest on either side.

The pouch of the pharynx and upper part of the *œsophagus*, commencing just below the base of the arytenoid cartilages and extending downward about four inches, were extensively ulcerated. The whole surface of the ulcer was irregular and of a greenish colour; its upper and lower edges were ragged and irregular. It was nearly encircled by a series of tubercular deposits of a pale, yellowish white colour, somewhat detached from one another, and of sizes varying from that of a pea to that of a small nutmeg. Their primitive seat was evidently the submucous cellular tissue. Some of them had broken down in the centre so as to admit a probe to pass through them and under the tissues, among which they were situated. The mucous membrane, over a great part of the ulcer, was wanting, or hung in shreds, or

FIG. 1.

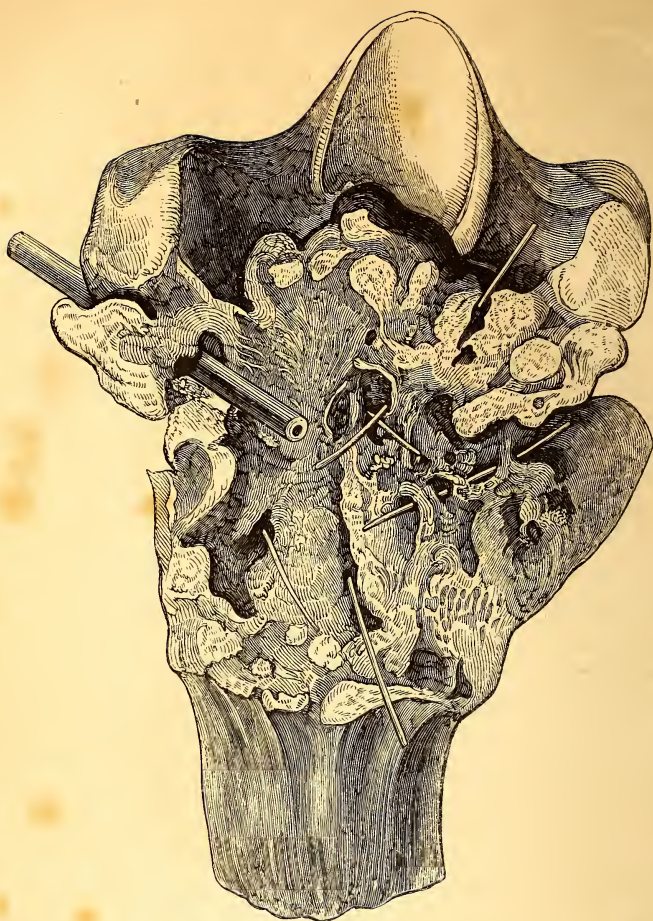


Fig. 1 represents the interior of the pharynx and œsophagus laid open from behind, exposing the ulcerated surface nearly surrounded by a series of tuberculous deposits. Some of these deposits have disintegrated or softened in the centre, so as to allow a bristle to pass through them and beneath the ulcerated mucous membrane surrounding them. The two bristles in the centre of the figure are seen passing through the openings that communicate with the trachea. The bristle on the left passes into a large pouch or abscess that extended towards the left mastoid muscle. The piece of gum elastic catheter, seen just above this, is placed in the track of the artificial opening, which opening would have admitted an instrument three or four times as large as this. Above the upper range of tubercles, is seen a small portion of mucous membrane elevated and thrown forward so as to obstruct the view of the arytenoid cartilages.

FIG. 2.

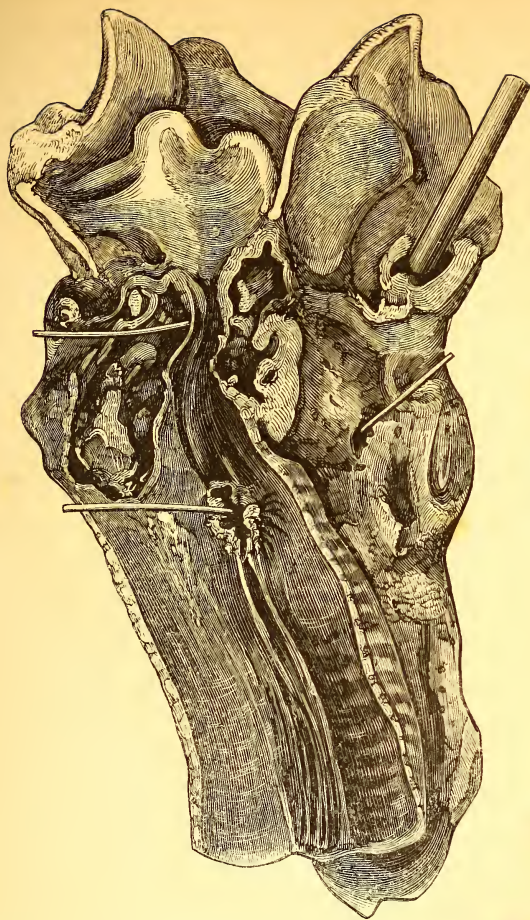


Fig. 2 represents the trachea and larynx laid open in front. Two bristles are seen passing through the openings between the trachea and œsophagus. The trachea is inflamed throughout, and in a state of ulceration immediately around the site of the artificial opening that was made into it about a week before death: it was of a dark greenish colour. This colour was not that of gangrene, but was merely owing to decomposing purulent and other morbid secretions. The catheter is seen, as in figure first, passing through the artificial opening into the œsophagus. A portion of integument has been left around the external orifice of this opening.



was bridled and undermined. The septum between the gullet and trachea had suffered more than any other part. On the œsophageal surface it appeared to be perforated at three or four places, but on examining it in the tracheal aspect, only two complete perforations were detected. Both of these were like irregular longitudinal slits, a quarter of an inch or more in length, one just under the lower edge of the crycoid cartilage, the other nearly two inches farther down.

The aryænoid cartilages were pressed irregularly against each other, so as to contract the upper orifice of the larynx. The glottis was contracted and irregular, not so much from œdema, as from a contracted state and doubling forwards of the whole upper and posterior part of the larynx. The mucous membrane of the trachea, opposite the perforations and around the borders of the artificial opening, was highly inflamed and of a greenish black colour. In the lower part of the trachea, as far as the bronchial tubes, it was also inflamed, but much less so than at its upper portion.

The œsophagus immediately below the ulcer, and thence throughout its whole extent, was perfectly healthy. The artificial opening which had been made into it for supplying the patient with food, was situated about midway between the upper and lower boundaries of the ulcerated portion. The mucous membrane in the immediate neighbourhood of this opening was not so much diseased as in other parts. The orifice itself was large enough to have admitted a tube half an inch in diameter. About an inch below this, in the same side, there was an ulcerated perforation* leading to a pouch, which was bounded by the inner and under part of the mastoid muscle, and was of the same dark greenish hue as the ulcerated portion of the œsophagus. Another pouch, communicating with the œsophagus, ran in, on the right side, between the middle and lower pharyngeal muscles. Its inner surface was of a light red colour, and it appeared to have been produced simply by serous and fibrinous effusions, without suppuration.

In the dissection, prior to exposing the œsophagus, an enlarged lymphatic gland, about the size of a nutmeg, was found lying on the right side of the neck in front of the mastoid muscle, and near the upper and posterior part of the larynx. It had all the characteristics of a similar tumour, removed from the opposite side of the neck during the first operation. The tissues on either side of the neck in the neighbourhood of the larynx and diseased portion of the œsophagus, were all somewhat consolidated by inflammatory adhesions. Contrary to my expectation, I found the left sterno-mastoid muscle, which had been divided transversely, so perfectly reunited that scarcely any traces of the incision were observable. A sort of cellulofibrous cicatrix was, on careful inspection, discovered along part of the transverse cut, but not throughout its whole extent. I may here remark that the patient, in consequence of the division of this muscle, at first found his neck weak and his head disposed to fall back in attempting to recline ;

but this weakness was not of long continuance. There was never any torsion or lateral inclination of the neck in consequence of the division of the muscle.

It may here be asked, were there no symptoms before death indicating the existence of the perforations between the trachea and œsophagus? The first appearance that led to a suspicion of the sort, was the passage of air into and out of the artificial opening in the neck, which was noticed for eight or ten days before the operation of tracheotomy. This appearance was not constant, but was observed for a few minutes after every removal of the œsophagus tube. The next circumstance, leading to the same suspicion, I noticed, for the first time, a day or two only before death. A few drops of prepared arrow-root, after I had administered a bowlful of this through the œsophagus tube, were seen within the trachea, immediately behind the opening made by the operation of tracheotomy.

The accompanying plates will probably convey a more accurate idea of the pathological condition of the upper part of the trachea and œsophagus, than can be given by mere verbal description.

The foregoing case, in reference as much to its pathological character as to the measures instituted for its relief, is one of unusual importance. The tubercular deposits in the submucous cellular tissue around the upper part of the œsophagus, were unquestionably the starting point of disorder. They probably existed there long before the first serious manifestations of disease, and may have given rise to the "narrow swallow" with which the patient had always been affected. The extension of irritation from these to the tissues in their neighbourhood, probably induced the cough which had troubled him for a few weeks prior to the first symptoms of stricture. But up to the period of opening into the œsophagus, the disease, I am disposed to believe, had not progressed to ulceration, at least to any extent; for when opened, so far as I could see, the inner surface of the œsophagus was smooth and of its natural colour. Above the opening the finger could detect some irregularity; but there had been no discharge of blood or of purulent matter from this surface. Below the cut the tissues were also smooth, though somewhat rigid and resisting to the first introduction of the tube. This rigidity was very circumscribed, easily overcome and never subsequently observed.

Whether the long continuance of the tube in the œsophagus had much to do in favouring the spread of ulceration or not, is difficult to determine. I am disposed to think it had no marked effect in this way. The ulcer did not extend beyond the range of the tubercular deposits, although the tube reached much farther down, and was as likely to affect the mucous membrane at its lower as at its upper portion. Be this as it may, I would not, in a similar case, recommend the constant continuance of the tube in the passage. The recorded cases of foreign bodies lodged in the œsophagus

clearly show that ulceration, leading to perforations, is readily excited in this organ. With the view of allowing the cut in the neck to close, if this were desirable, I would have the patient nourished by introducing the tube anew at every meal-time, and removing it immediately afterwards. And if this proceeding could not be effected through the mouth or nostril, I should, as in the latter period of the foregoing case, relinquish all attempts to close the wound in the neck, and introduce the tube through the artificial opening.

Permanent contractions of the œsophagus are usually looked upon as the result of carcinoma. This view of these disorders has, doubtless, had much influence, hitherto, in deterring surgeons from attempting any very efficient measures for overcoming them. The disease, in the present instance, was clearly not carcinomatous. The tubercular masses were imbedded in, and not gradually diffused among the surrounding tissues. They had no appearance of organization. Some of them had become softened or disintegrated in the centre. They had given rise, at no time, to lancinating pains. The surrounding parts had not the appearance of scirrhus; and no similar deposits were found in any other part of the body. Again, the patient had many of the marks of a strumous diathesis. These circumstances, taken in connection with the existence of concrete pus in the centre of the lymphatic gland on the side of the neck, can leave no reasonable doubt as to the scrofulous nature of the disorder. It is the second instance in which, I think, I have met with a scrofulous affection of the œsophagus. The first was in a lady. The disease, in her case, was seated just above the cardiac orifice of the stomach. It had progressed to ulceration and to the formation of a large abscess in the posterior mediastinal space, communicating with the ulcerated œsophagus, and was connected with tubercular deposits in the peritoneum and in other parts of the body. But, remarkably enough, in both of these instances, the lungs contained none of these substances. I have met with other cases of permanent contraction of the œsophagus not the result of carcinoma. One of these, a mild case, recently under my care in the hospital, was the result of a burn, caused some two years before admission, by attempting to swallow some sort of very hot food. The obstruction was nearly opposite the upper end of the sternum; but was not so severe as to absolutely prevent the passage of nutriment into the stomach. Another, and much more severe case, was caused by attempting to swallow what was supposed to be a solution of corrosive sublimate. This patient was admitted into the hospital, many years since, with a concomitant affection. For nearly a week after his admission and before the stricture was discovered, he had not swallowed a particle of food or drink. Luckily the stricture was capable of dilatation by means of a stomach tube. The patient soon learnt how to use this instrument of himself. He remained, after his recovery, for many years a labouring man about the hospital; and, during this period, he was frequently obliged to resort to the use of his tube, which he kept always at hand.

The ultimately fatal result, in the case of Mr. Ames, though brought

about indirectly by the disease of the *œsophagus*, should offer no objection to a repetition of the operation of *œsophagotomy* under similar circumstances. The patient's life was considerably prolonged by it. The super-vention of disease in the bronchial passages, which was the immediate cause of death, should, as it appears to me, be looked upon as incidental, and not as a necessary consequence of the primary affection. And had this secondary affection not occurred, there is no reason to doubt that, so far as nutrition and digestion were involved, the patient's life would have been preserved. The opening of the trachea, called for towards the close of the case, was the means of prolonging life only for a few days.

In reference to the instruments employed for dilating the wound in the trachea, I am disposed to believe that the wire dilator, above delineated, or even the ring and lateral ligatures, may occasionally be found, as in this case, more convenient and useful than the canula of Casserius. On a former occasion I succeeded remarkably well in temporarily dilating the wound, by passing the lateral ligatures through the barrel of a quill, placed transversely across the neck, and tying their extremities together over this instrument. Any hollow tube, or a thin piece of wood, notched at either end and about three inches long, would answer a similar purpose.

Many systematic and other surgical writers, since the commencement of the last century, have spoken of *œsophagotomy* as a feasible operation. But the instances hitherto published, or in which it is said to have been performed on the living subject, amount, at most, to only five. The first two of these, stated to have occurred more than a century ago, are, to say the least, of questionable authenticity; and all of them were for the removal of foreign bodies. The present, so far as I can discover, is the only instance in which this operation has been performed for supplying the stomach with food.

The older surgeons were so apprehensive of danger, in attempting to reach the *œsophagus* by an incision, that in cases calling for this, they contented themselves with the use of probangs, flexible bougies, metallic sounds, blunt hooks, forceps and other similar instruments; or, as a last expedient, where the foreign body in the gullet impeded respiration, they first opened the trachea, and afterwards attempted to disembarass the *œsophagus* with the probang; or, failing in this, they allowed the foreign body to work its way outward, as it might, by ulceration. Nicholas Habicot, a surgeon of Hôtel Dieu, about the beginning of the seventeenth century, was the first to open the trachea for this purpose. A youth about fourteen years of age was brought to him, who, in dread of being attacked by robbers, had swallowed nine gold pistoles enveloped in a piece of cloth. This package had lodged in the *œsophagus*, and was threatening suffocation by its pressure against the trachea. Habicot at once relieved the breathing, by opening the trachea and inserting a canula, and afterwards pushed the money onward into the stomach by means of a long leaden sound.*

* Sprengel, tome 7, p. 142. Hevin, in *Mémoires de l'Acad. de Chirurg.* tom. 1^{re}. Habi-

Jean-Baptiste Verduc, a surgeon of Paris, about a century after Habcot, was the first to suggest the operation of opening into the œsophagus. If the foreign body, says he, cannot be otherwise dislodged, and the patient is in danger of suffocation, I am disposed to think that pharyngotomy might be attempted. For this we should proceed as for bronchotomy. The bronchial muscles should be separated in order to reach the œsophagus in the most direct manner; and this passage should afterwards be opened longitudinally over the situation of the foreign body. M. Hevin,* from whom I have borrowed this passage, has taken much trouble to enforce the suggestion of Verduc. But Guattani, a surgeon of Rome, about the middle of the last century, proceeded a step farther.†

A drunken fellow tossing up a chestnut, to catch it in his mouth as it fell, unluckily allowed it to slip directly into the œsophagus, and could not afterwards dislodge it. In an hour or two after the accident, finding himself unable to swallow, he applied for relief at the hospital to which Guattani was attached. The patient being intoxicated, and having, as yet, no difficulty of breathing, some doubt was at first expressed as to the existence of the nut in the gullet, especially as it could not be felt externally. The case soon took a serious turn. The introduction of any instrument into the throat was found to be extremely difficult, in consequence of the convulsive action of the muscles of the lower jaw. Symptoms analogous to those of delirium tremens ensued, accompanied with heat in the throat, and inability to swallow. For some days the patient was supported solely by nutritive injections. On the sixth day, notwithstanding several previous venesections, he was seized with severe epistaxis; and this recurred several times afterwards. On the eighth day his respiration became embarrassed. On the tenth he was able to swallow; and a singular sort of noise was produced by deglutition. He died on the nineteenth day. The œsophagus was found firmly contracted immediately above and below the nut. This had partially escaped from the passage into an ulcerated opening, and lay just outside and to the left of the trachea. The membranous portion of the trachea was sphacelated, and perforated by an opening large enough to admit a small bean; and by means of this opening a free communication had been established between the trachea and œsophagus.

This unfortunate case appears to have led Guattani to inquire into the measures best calculated to avert a similar catastrophe. He examined into the anatomical relations of the gullet; operated several times on the dead

cat's work, from which these authors quote, is entitled "*Question Chirurgicale sur l'Opération de la Bronchotomie*," printed in 4to. at Paris, 1620. He died in 1624.

* *Précis d'Observations sur les corps étrangers arrêtés dans l'Œsophage.* Par M. Hevin, in the first volume of the *Mémoires de l'Acad. de Chirurg.* J. B. Verduc's *Traité des Opérations de Chirurgie*, was published at Paris in 1701.

† *Mém. de l'Acad. de Chirurg.* 8vo. Paris, 1819, tome 3, p. 343.

body, and on numerous living animals; and, finally, demonstrated to some of the surgeons of Paris a mode of opening into the *œsophagus* which, if not the most approved, was, at the time, sufficient to establish the practicability of the operation. His method, essentially the same as that formerly suggested by Verduc, has never been carried into effect on the living body. He reaches the *œsophagus* on the left side of the neck, by a wound passing between the sterno-hyoid and sterno-thyroid muscles on the one hand, and the trachea on the other.

In the third volume of the *Mémoires de l'Académie Royale de Chirurgie*, containing his essay on this subject, I find a brief notice of two cases, in which *œsophagotomy* is said to have been actually performed. These cases are not detailed, nor were they noticed on the authority of the operators. The first occurred as early as 1738, some twenty years before its announcement, in the practice of M. Goursauld, a provincial surgeon; and the second in that of M. Rowland, a surgeon of the French army. Long before this period, operations had been performed for extracting needles, and even fragments of bone that had escaped from the gullet into abscesses or adventitious openings, so as to be readily detected beneath the integuments on the side of the neck. Several such cases are in fact referred to by M. Hevin. But the procedure for the removal of substances thus situated, is of much less serious moment than the operation of *œsophagotomy*. Subsequent to the time of Guattani, several new suggestions were offered, and instruments devised by Vacea and others for rendering the operation in question less formidable. Baron Larrey,* on one occasion, succeeded in removing the fragment of a bayonet which had long remained concealed behind the fauces, by puncturing the posterior pillar of the fauces with what he calls a pharyngotome, and afterwards withdrawing the foreign body, by means of a forceps, through the mouth. But the operation of *œsophagotomy* appears never to have been fairly attempted, prior to its successful performance by M. L. J. Begin, Surgeon Major to the Military Hospital of Val-de-Grâce, on the 15th of January, 1832.

A soldier, 24 years of age and in good health, while eating soup on the 4th of January, 1832, allowed a small fragment of bone to enter the *œsophagus*, and, being unable to rid himself of it, he applied at once to his regimental surgeon for relief. Several ineffectual efforts were made both before and after the man entered the hospital, to remove the bone from the part. On the 8th of January he was seen for the first time by M. Begin. The patient experienced much pain in deglutition, accompanied with a sense of tension in the neck. His respiration was embarrassed, at times so much so as to threaten suffocation. The left side of the neck was tumefied. He could not open his mouth freely, nor throw his head backwards suffi-

* Clinique Chirurgicale, tome 2, p. 133.

ciently to admit of full exploration of the fauces. He had a copious flow of mucus and saliva from the mouth. The bone could be detected by introducing a gum-elastic sound to the distance of seven or eight inches, but could not be moved, either upwards or downwards, by any instrument introduced into the fauces. Deglutition, however, was not absolutely interrupted. Having in vain essayed the use of probangs, curved forceps and blunt hooks of flexible metal; palliating the symptoms, in the mean while, as much as possible by leeches, mucilaginous drinks and other similar measures; and fearing that, if allowed to remain, the foreign substance might perforate the trachea, or pass laterally into some of the great vessels of the neck; M. Begin, on the 15th of January, twelve days after the accident, resolved upon the operation of œsophagotomy.

With his face toward the patient's left side, he commenced his incision a finger's breadth above the sterno-clavicular articulation, and carried it parallel to the trachea along the left side of the neck, in front of the sterno-mastoid muscle, as far up as the thyro-hyoidean space; through skin, superficial fascia, platysma-myoides and deep fascia, into the cellular space between the trachea and œsophagus on the one side and the great vessels and nerves on the other; dividing, as he progressed, the omo-hyoid muscle, and placing a ligature on the superior thyroid artery, or one of its branches, which had been divided. These incisions brought him to a large sloughy abscess, which he found communicating with the œsophagus. The foreign body was discovered somewhat further down, in the portion of the œsophagus corresponding with the middle of the first bone of the sternum. After much difficulty it was dislodged and removed by the aid of a blunt hook. For some time afterwards food was administered by the occasional introduction of the stomach-tube. On the 20th of February the wound in the neck had cicatrized. The patient was afterwards exhibited, perfectly cured, to the Royal Academy of Medicine.

Remarkably enough, before this patient had left the hospital, another was admitted almost precisely similar. This second patient, also a soldier, aged 28, in eating soup, on the 13th of February, swallowed a fragment of bone which lodged in the œsophagus. The symptoms were not quite so grave as in the first case; but the foreign body was quite as firmly impacted in this part, and could neither be depressed nor removed by any sort of instrument, through the mouth. Deglutition and respiration became seriously involved; and, on the 19th, M. Begin was obliged to open the œsophagus. On exposing this, an unnatural prominence, caused by an angular projection of the bone against its coats, could be felt at the bottom of the wound just above the level of the sternum, but too low to be reached by an incision upon it without endangering the inferior thyroid artery. The œsophagus was opened at some distance above the projection. The forceps was afterwards introduced, and the foreign substance was thus removed without difficulty. Symptoms somewhat serious followed the operation.

On the fourth day, after an attack of coughing, the patient discharged a great quantity of pus through the wound. The flow continued for at least twenty-four hours; and, after this discharge, the patient began to recover. Before the wound had cicatrized, another abscess formed beyond the sternomastoid muscle just above the clavicle. This was opened on the 26th of March. The patient left the hospital perfectly well on the 9th of April following.*

The third and only other instance in which this operation has been performed for the removal of foreign substances, is recorded by Mr. James M. Arnott, surgeon to the Middlesex Hospital, London, in the 18th volume of the *Medico-Chirurgical Transactions*. The patient was a child only two years and a quarter old. The offending body, as in the two former cases, was a piece of bone. The operation was performed on the 21st of January, 1833, four weeks after the accident, and not until the respiratory organs had become seriously involved. The child bore the operation well; but the case resulted fatally, fifty-six hours afterwards, from inflammation of the lungs.

The case which I have reported, then, should be looked upon as the fourth authentic instance in which *œsophagotomy* has been performed on the living subject; and as the only one in which it has been employed for the relief of stricture.

The operative procedures of M. Begin, Mr. Arnott and myself, although essentially alike, differ in some important points from one another. The first of these surgeons, operating on the left side of the neck, carries his incisions from below upward. If the foreign body within the *œsophagus* causes any projection, and is within reach, he cuts directly upon it. "But in a different case," says he, "the bistoury should be boldly plunged into the *œsophagus* parallel to its axis, at the middle of the wound, so as to lay it open to the extent of half an inch.† The incisions from below upward will enable the operator to use his left hand for dilating the wound and protecting the vessels and nerves on the side of the neck. These objects, however, can be quite as well effected by a curved spatula in the hands of an assistant. But as to plunging the bistoury boldly into the *œsophagus*, I must seriously protest against it. The yielding nature of this organ, even when its muscular fibres are put upon the stretch in deglutition, renders any attempt to incise it extremely difficult. It is readily fixed by passing a silver catheter or a firm gum-elastic tube into it. But a bold stroke of the knife, by transfixing the *œsophagus*, might readily endan-

* *Journal Universel et Hebdomadaire*, vol. ii., April, 1833.

† *Dictionnaire de Méd. et de Chirurg. Pract.* Article, *Œsophagotomie*, vol. 12, p. 153:—"Si le corps étranger faisait une saillie appréciable sur quelque point, il faudrait inciser immédiatement sur lui. Dans le cas contraire, le bistouri doit être hardiment plongé dans l'*œsophage*," &c.

ger the recurrent nerve or the large blood-vessels on the opposite side of the neck; or, passing obliquely forward, might perforate the trachea.

Mr. Arnott performed his operation on the right side of the neck. His incisions extending from the upper part of the thyroid cartilage about an inch and three-quarters in length, were made in other respects as in the operation of M. Begin, until they reached the outer edge of the sterno-thyroid muscle. The further separation of parts was effected either with the fingers or with the handle of the scalpel. A male silver catheter was then introduced by the mouth, and its point made to project, carrying the dilated gullet upon it. Into this he next made a small opening, through which he introduced the polypus forceps for seizing and removing the foreign substance. The pharynx at any part above the lower border of the cricoid cartilage, is quite as accessible on the right as on the left side. But immediately below this point the œsophagus begins to shift slightly from the median line, and inclines towards the left during the rest of its course along the neck. The selection of the right side as the field of the operation, except when the foreign body is found projecting on this side, appears, then, to be objectionable, especially where the œsophagus has to be opened low down.

I need not again repeat the steps of my own operative procedure, further than to state that it differed from both of the foregoing; first, in requiring a transverse as well as longitudinal incision of the integuments, partly for securing small vessels, but principally for exposing the diseased lymphatic gland that lay in the track of the dissection; and secondly, at the close of the operation, in requiring the thyroid gland to be partly detached, and the sterno-mastoid muscle to be divided transversely in order to expose the œsophagus at the lower part of the wound, and to gain sufficient room for securing the inferior thyroid artery in case it had been injured.

Notwithstanding Mr. Arnott's remark that œsophagotomy is a less formidable operation than is usually supposed, it is one that should never be undertaken without a full and deliberate view of its attendant difficulties. The chance of wounding the great vessels and nerves on the side of the neck is comparatively small, as these are readily drawn aside. The recurrent nerve, if brought into view at all, is easily avoided by approaching the œsophagus on its outer side somewhat toward its posterior aspect. A hasty stroke of the knife, at this stage of the operation, might endanger the recurrent nerve, the blood-vessels or other parts on the opposite side of the neck. If the incisions are rather too high up, the bistoury may wander into the cellular tissue between the different layers of the pharyngeal muscles. The superior laryngeal nerve, and occasionally some deep veins passing towards the internal jugular, will be endangered when the incisions through the layers of deep fascia are carried above the level of the thyroid cartilage. The superior thyroid artery, or its branches, appears to have been divided in every case hitherto mentioned, and to have been readily secured without

leading to any alarming hemorrhage. The surgeon, however, cannot be too cautious in approaching the inferior thyroid, which, from its depth, size and source, might prove externally troublesome if divided. In no instance, as yet, has it been injured; although in my own, as well as in some of the other operations, it must have been closely approximated.

Having now spoken of *œsophagotomy* as a mode of relieving such strictures as are within the reach of an incision on the side of the neck, another question naturally arises:—what measures should be adopted for the relief of strictures of the *œsophagus* so situated as to be inaccessible in this way?

This question, of course, applies only to such organic obstructions of this organ as are irremediable by bougies and other means of mechanical dilatation, and so severe as to threaten total and immediate obliteration of the passage. Time may be gained and the patient's life prolonged for weeks, in such cases, by the use of nutritive injections. But the most that can be expected from these, where any hope remains of preserving the patient's life, is a temporary respite from more efficient measures.

Organic strictures may occur at any point in the course of the *œsophagus*; but the most frequent seat of deep strictures is at its transit through the diaphragm, or just above its termination. I had occasion, about three years since, to prescribe for a gentleman from New Jersey with a stricture thus situated. For some months he subsisted wholly on fluids; and these he swallowed with the utmost difficulty. He finally died of inanition. The disease, in this case, was probably scirrhus. But disorders of a different character, leading to the same result, may attack this part; as in the case of a lady with a tubercular affection, to which I have already alluded; in cases resulting from chemical or mechanical injuries, and in certain malformations of the *œsophagus* interfering with deglutition, and yet, possibly, not beyond the reach of art. An instance of the latter sort was reported by M. Martin, of Aubagne, to the Medical Society of Marseilles: The infant refused all nourishment, or this, when forced down, was immediately rejected. The child lived only thirty-six hours. The *œsophagus* terminated in a cul-de-sac, just below the pharynx, and the stomach communicated by a canal, of the calibre of a small quill, with the trachea near its bifurcation.*

Incised and even gun-shot wounds have often penetrated the stomach without resulting fatally. Injuries of this sort are, unquestionably, among the severest and most alarming; but their proportion of deaths to recoveries is perhaps fully estimated by Percy, who calculates that out of twenty cases only four recover. Etmuller† and Hevin have recorded cases, and

* New York Medical Repository, vol. xxii. p. 244.

† Acta Physico-Medica, Obs. LII. vol. iii, p. 168. In this paper Etmuller refers to the following authors as furnishing confirmation of the curability of wounds of the stomach, viz.:

Galen, Albucasis, Julius Alexandrinus, Fallopius, Job. Matthæus, Jo. Schenck, Dan. Becker, Diembrock, Menzel, Blegny, Wolff and Cowper. To this list, Hevin adds three

furnished us with numerous references to recoveries after such injuries, recorded among the writings of the older authors since the days of Galen. But Plouquet, according to Hennen, has exceeded all others in the vast number of cases he has amassed. Hennen himself* refers to two successful cases in the practice of Dr. Thompson, after the battle of Waterloo, to another in the *Philosophical Transactions*, and to others in the writings of Kluyskens, Schlichting and Percy; and Permannus is said to have often stitched the stomach in his practice with the army. The following instance I have condensed from the original report of it, in the *New York Medical Repository*, vol. xv. p. 215:

In the month of June, 1784, three men undertook to secure a runaway negro, who was armed with a large knife. The negro, in defending himself, gave one of them a back-stroke with the instrument, which entered near the cartilages of the false ribs on the right side, penetrated into the stomach and passed nearly transversely the cartilages on the other side. The wound was about two inches below the ensiform cartilage and nearly three inches long externally. The stomach was opened by a wound of more than two inches long. The dinner, which the man had taken just before the accident, consisting of bacon, cabbage and cider, was partially discharged through the cut, and part of it escaped into the peritoneal cavity. The wound was sewn up by an old soldier with an awl, needle, and thread. The patient was seen, for the first time, by Dr. Archer, of Maryland, (who has recorded the case,) some forty-eight hours after the accident. The stitches being only through the skin, were then removed. The patient was kept on his back, and nourished with strained soups; the wound was kept clean, and dressed twice a day. At the doctor's second visit, on the ninth day, it looked well, and the patient was free from fever. He complained of soreness at the right groin, which was swollen, hard and inflamed. A poultice was applied and continued until suppuration occurred. The swelling at the groin was then opened, and a large quantity of pus, mixed with pieces of cabbage, was evacuated. The patient suffered more from this abscess than from the wound in the stomach. After the matter was discharged both wounds healed up. Dr. Archer often saw the man after his recovery. The only permanent inconvenience resulting from the accident was a hernial protrusion of the stomach, about the size of a goose-egg, which would appear after eating or drinking, and recede when the stomach was empty.

Having now shown that wounds of the stomach are far from being necessarily fatal, we may next proceed to show that openings, whether the

cases on his own authority from the records of the academy, and further references to others in the writings of Christoph. a Vega, Matth. Carnax, Bern. Suevus, Sennertus, Bohnius, Jacob Oetheus, J. F. Hildesius, Selveltetus, Wolsius, Felix Platerus, Le Dian, and to others in the *Ephemerides*, Dec. 2, Ann. 1; and Dec. 1, Ann. 10, &c.

* *Principles of Military Surgery*, Philadelph. 1830, p. 346.

result of injury or occurring spontaneously, may give rise to permanent fistulous communications between the stomach and external surface of the abdomen, and that such fistulæ may exist for years without interfering with digestion or impairing the general health. A most remarkable example of this sort was published in 1803, by Dr. Jacob Helm, of Vienna, an abstract of which may be found in the 12th vol. of the N. Y. Med. Repository. The following is the case still more abbreviated:

Theresa Petz, of Breitenwaida, a village seven miles from Vienna, the wife of a blacksmith and mother of seven children, had, for many years, suffered from an obscure and painful affection of her stomach. A tumour, not larger than a hazelnut, appeared, in 1790, over the region of the stomach and slowly increased until 1796, when it extended to the navel. In April, 1797, it suppurated, broke, and gave issue to a pint of thin, yellowish matter. The dropsical swellings and occasionally agonizing pains, which she had long endured, entirely disappeared within a fortnight afterwards; and for many years subsequently she continued in good health. The opening into the stomach was at first small, but readily gave issue to particles of food. In the July following its first occurrence, it was large enough to admit the finger; it afterwards acquired an extent of two inches in diameter. A catheter was often introduced into the upper and lower orifices of the stomach without exciting pain, vomiting or any other unpleasant symptom. She sometimes washed out the stomach with milk and water, and occasionally she relieved herself of an over-amount of food by removing it from the stomach through the opening. After the washing with milk and water, she was usually obliged to take food for relieving a sense of distress and uneasiness. When she was riding in a wagon, or subjected to any considerable motion, the bile would rise into her stomach and issue from the opening. She attended to all her domestic affairs, and was usually in good spirits. In 1800 she was able to attend to field-labour, and to walk to Vienna to show herself to physicians and other curious persons.

Ettmuller, in the *Acta Physico-Medica Academiæ Cæsareæ Naturæ Curiosorum*, (vol. iii. p. 170,) published at Nuremberg, for the year 1733, gives an instance somewhat similar: A single woman, aged thirty, the house-keeper of a very celebrated man, consulted me last year, says he, in reference to a hole about the size of a large pea in her left hypochondriac region, surrounded by inflamed and indurated integument, and giving issue to portions of her food and drink. She referred this indirectly to a fall against the top of a post, which happened to her when she was only ten years old. After the injury, an indolent swelling appeared over the stomach, which eventuated in the fistulous opening. Her exercise and active habits appeared to prevent this from closing. On changing her mode of life and confining herself for a few weeks to bed, the fistula contracted, and she is now, says the report, getting on prosperously.

M. Richerand gives another case. This patient was also a female, aged forty-seven. The opening, as in the foregoing instance, had resulted from an indolent swelling, caused by a local injury many years before its breaking. The fistula was seated at the upper and left portion of the epigastrium. It was of an oval form, eighteen lines long by rather more than an inch wide, allowing the inner surface of the stomach to be seen through it. She became a patient at La Charité, under the care of M. Corvisart. At this period her appetite was equal to that of three ordinary women of her age. The fistula had existed about nine years. Three or four hours after eating she was usually obliged, from a sense of uneasiness, to remove the compresses with which she covered the fistula, to give issue to the contents of the stomach. After this escape of food, which was discharged with a considerable quantity of gas, she was accustomed to wash out the stomach with an infusion of chamomile. This quieted her, and enabled her to sleep. Her bowels were habitually constipated; her urine was small in quantity; her pulse was weak and rarely over forty-six beats in a minute: she was feeble and emaciated, probably from want of nourishment; only a small portion of the food which she took passed beyond the pylorus. She died of a colliquative diarrhœa six months after her admission into the hospital. The stomach was found intimately united to the abdominal parietes. The opening into it was at the union of the two left thirds with the right third; or about eight fingers' breadth from its great extremity, involving only the pyloric portion. No other organic lesion was discovered.*

A case more remarkable than either of the foregoing is the well-known instance of the Canadian, Alexis H. Martin, recorded by Dr. Beaumont, of the United States Army. The fistula in this case resulted from a gunshot wound. He lived for many years after its occurrence in the employ of Dr. B., who was in the habit of frequently inspecting the stomach, and making all sorts of experiments upon its inner surface through this opening, preparatory to the publication of his work on digestion.†

Mr. Hennen refers to a case of Ettmüller's in the fifth volume of Haller's "*Dissertationes Chirurgicæ*," probably the same which I have quoted above, in which the fistula remained open ten years; and Wenker, in the same volume, says he, relates another in which a wound of the stomach continued open for twenty-seven years.

But the remarkable cases to which we have just referred, much as they might warrant the propriety of establishing an artificial opening into the stomach, as a last resort in some severe cases of strictured œsophagus, are, after all, not so much in point as others that yet remain to be noticed. For if the early records of surgery are worthy of confidence, this formidable

* *Physiologie*. Paris, 1833. Tom. I. p. 232.

† *Experiments and Observations on the Gastric Juice and the Physiology of Digestion*. By Wm. Beaumont, M. D., Plattsburgh, 1833.

operation has actually been performed, on three several occasions, for the removal of sharp instruments from the stomach. These cases are related in the German *Ephemerides*, and quoted by M. Hevin in his essay above referred to, from which I have made the following abstract.

A young Prussian peasant, feeling some uneasiness in the stomach, attempted to excite vomiting by introducing a knife with the shaft downward into his throat. The instrument slipped from his fingers and fell into the *œsophagus*. He attempted to dislodge it by placing himself head-downwards, but failing in this, he finally washed the instrument into his stomach with a draught of beer. The surgeons of Königsberg, whom he consulted, advised him, in view of the dangers to which he was now exposed, to have the knife removed by an incision; and Daniel Schwaben, a lithotomist, was selected as the operator. About a month and a half after the accident, having already been prepared for the operation by a gentle purge, and by oleaginous and balsamic medicines, the patient was tied to a plank, and the course of the proposed incision was marked with pen and ink over the left hypochondrium. The external incision was made longitudinally, to the extent of two inches. The stomach being empty at the time, did not present at the wound, and the surgeon was obliged to seize and draw it outward by means of a curved needle. The projecting point of the knife was easily recognized through the coats of the stomach. An incision was made into the organ immediately over the instrument, through which it was promptly extracted and found to be about ten inches long. The edges of the wound in the stomach required no sutures. The incision of the integuments was drawn together by five peg sutures (*chevilles ou agrafes*). No serious symptoms ensued, and the patient soon got well. The knife and a portrait of the young peasant himself, says the report, are both preserved in the electoral library at Königsberg.

The German jugglers of former days must have had strong stomachs, and been more matter-of-fact sort of people than some of their sublimated descendants. Infinitesimal potions of silex and microscopic globules of sulphur they would have scorned, at the sight of a tasty jack-knife. A young fellow of Sprague, out of mere sport, says Crollius, swallowed a knife nine inches long, the point of which presented a little above the fundus of the stomach, towards its left side; and the handle, towards the spine. Two months afterwards, it was successfully extracted from the stomach by Florian Mathis, first surgeon to the emperor.

Again.—A Prussian woman had the misfortune to swallow a knife seven inches long, which she had introduced into the throat to excite vomiting. At first it stuck in the *œsophagus*, but afterwards gradually descended into the stomach, where it remained three days without causing any pain. She afterwards felt pricking sensations, and very soon the point of the knife could be felt in the left side. The pains increasing forced her to seek advice. Dr. Hubner, of Rastembourg, to whom she applied, made an incision over

the point of the knife in the left hypochondrium, on the eleventh day of the accident. He found that the blade had already pierced through the stomach, and had excited slight suppuration around it. The knife was withdrawn with a pair of forceps. Her cure was afterwards very prompt.

It would take us too far out of our way to refer to instances of foreign bodies successfully removed from other portions of the alimentary canal.* Enough, I presume, has been advanced to show that, under pressing circumstances, and as an extreme measure, the operation of opening into the stomach, for the purpose of supplying it with food, is sufficiently warrantable, and that, under some circumstances, it may be the means of preserving or prolonging life.

The anatomical or surgical knowledge requisite for performing it with safety, so far as the process itself is concerned, is immeasurably less than is called for in numerous comparatively trifling operations. Its immediate danger is from hemorrhage; its more remote, from peritonitis; and its ultimate, from impaired action of the stomach. The loss of blood is not likely to be severe, except from penetrating into the stomach near its upper or lower curvature in the situation of its greater blood-vessels. Peritonitis may possibly be avoided by preventing the escape of blood, or of any of the contents of the stomach into the peritoneal cavity, as well during as after the operation; by avoiding any injury to the omentum, and all undue manipulation with the serous surfaces; or it may be controlled by depletion, anodynes and other measures employed for the treatment of ordinary peritoneal inflammation. The stomach being necessarily empty under the circumstances, calling for the measure in question, the lower edge of the liver, or the colon distended with gas, might interfere with our attempt to bring it into view. But these organs can be readily avoided, or pushed aside. The case quoted from M. Richerand would seem to show, that the functions of the stomach would be most impaired where the opening had been made into its pyloric portion. Other cases would lead us to infer that serious nervous symptoms, at the time of the wound, would be most frequent when the opening was effected near the cardiac orifice. The place of election, then, for opening the stomach, would be at equi-distance from its two extremities, and midway between its two curvatures, at its anterior prominence.

NEW YORK, *July*, 1844.

* Some of these are referred to by Mr. Hevin. But perhaps the most interesting fact of the sort on record is given by Dr. White, senior, of Hudson, N. Y. Dr. W., August 7th, 1806, removed, by incision, and with complete success, a silver teaspoon from the small intestine of a person who had swallowed it, in a fit of delirium, about a month previous. For a full report of the case see N. Y. Med. Repos., vol. x. p. 367.

ART. III.—*Osteo-Sarcoma*. By CHARLES BELL GIBSON, M.D., Professor of Anatomy in Washington University of Baltimore.

Hagar Jennings, coloured, from Anne Arundel county, aged 35 years, was brought to my office on the 5th of June by Dr. Richard H. Thomas, of this city, for the exploration of a tumour situated on the right side of the

Fig. 1.



face. The accompanying figure gives an accurate representation of her appearance. At the first glance, the disease appeared to involve the upper as well as the lower jaw; but careful investigation soon satisfied us that such was not the case. The tumour was round and very regular; the skin tense, and free from ulceration. Anteriorly, the boundary of the disease seemed to be the first bicuspid tooth; posteriorly, the tumour stretched two inches beyond the parotid region. The base was about an inch lower than the base of the sound side; and the superior aspect was on a level with the

lower eyelid. Within the mouth the extent of the disease was less; the finger could be introduced, though with difficulty, between the outer side of the upper jaw-bone and the inner face of the tumour; it encroached, however, very much upon the fauces, pushing the uvula to the left side, and dipping to some extent into the pharynx.

The tumour began to form six years ago, and is attributed by the patient to carious teeth, and to the irritating domestic remedies she used for relief of the pain. From the posterior margin of the tumour to the termination of the disease at the bicuspid teeth, the measurement was 9 inches, and from the superior to the inferior surface $7\frac{1}{2}$ inches.

The motions of the joint, although limited in extent, were perfect.

The sensations communicated to the finger in examining the tumour were different in different points. At one spot, that of extreme hardness; and at another, that of softness amounting almost to fluctuation. Again, the parietes were elastic, and presented the peculiar sensation which the mixture of bone and cartilage invariably offers in these affections.

The disease was pronounced to be osteo-sarcoma, and an operation sug-

gested. The patient cheerfully consented, and was immediately placed under preparatory treatment.

On the 12th June the operation was performed in the hospital of Washington University of Baltimore, in the presence of a number of physicians and students.

Professor Baxley and Dr. T. H. Buckler kindly afforded their valuable assistance.

The primitive carotid artery of the right side was first secured by ligature in the usual manner; the patient lying on a narrow table on her left side: the wound was closed with the interrupted suture.

The first incision was then made upon the tumour, extending from the condyle to within half an inch of the commissure of the lips, and being convex downwards. A flap was then formed by dissecting the skin and muscles upwards from the tumour. The second incision was parallel with the first, about an inch lower—the space between the two being left attached to the tumour. A second flap being made, by dissecting downwards from the tumour, the space between the anterior terminations of the incisions was divided, and the knife passed around the bone; the first bicuspid was now removed by the forceps, and the saw applied in its cavity. The bone thus detached served as a lever, and assisted in effecting the disarticulation of the jaw. The straight bistoury was used to divide the muscular attachments of the tumour, being passed on the inside of it, and, finally, the ligaments and pterygoid muscles were severed, and the whole mass removed.

In completing the detachment of the tumour from its connections with the temporal bone, the knife was unavoidably plunged into the tumour, at this point very soft, and gave issue to a large amount of dark blood, so rapid and abundant, in fact, as to startle us with the apprehension that the jugular vein had been divided. This was soon ascertained to be unfounded.

The diseased mass being removed, the superior maxilla was found to be healthy, as also the glenoid cavity of the temporal bone; the soft parts were natural in appearance, and no hemorrhage occurred more than a general oozing from the deep cavity. This was soon arrested by the application of the muriated tincture of iron, and we proceeded to dress the wound. The edges were brought together, and retained by the interrupted suture and adhesive straps.

The operation was commenced at half-past eleven o'clock, and the patient was removed from the amphitheatre at twenty minutes before one, having been an hour and ten minutes on the table. During this time her composure and fortitude were remarkable. In a momentary pause in the operation she asked if her conduct was satisfactory. She became faint occasionally, but easily revived with the assistance of a little wine and water.

At 2 o'clock, P. M. I left her under the charge of Drs. Massey and Davis, the resident physicians of the hospital. At that time her pulse was 70—feeble, skin cold, intelligence perfect. She was allowed a little cream and water as a drink.

5 P. M. Pulse 90—skin cool. She has been slightly wandering in mind since last visit; complains of pain in swallowing.

9 P. M. Does not recollect the visit at 5 o'clock. Pulse 110—skin warm. Both sides of face have the same temperature—discharge of bloody saliva through the mouth. Has been sleeping since last visit.

June 13th—6 o'clock, A. M. Pulse 106—skin warm, but pleasant; took tinct. opii, gr^{ss} xxv. last night; slept tolerably; mind tranquil; same diet.

12 o'clock, M. Doing well. Pulse 104.

14th—4 A. M. Restless all night; now sleeps; has coughed several times; pulse 118. R.—Enema of castor oil.

15th. Removed dressings to-day; find that union by first intention has taken place nearly throughout the wound; reapplied straps; pulse 104. Bowels were not satisfactorily evacuated by the enema. R.—Senna and sulph. magnes. q. s.

16th. Slept well last night; appetite returned; she asks for coffee and chicken soup; continue cream and water.

17th. Dressed wound again to-day; union perfect except in two spots, from one of which exudes a sloughy sanious fluid, and from the other distils saliva, the consequence of the unavoidable division of the duct of the parotid gland. The mouth is considerably drawn to the left side, from the necessary division of the portio-dura nerve.

18th. Doing well; same discharge from the spots mentioned. Touched the salivary fistula with nit. argenti.

20th. Asked to sit up to-day; diet, chicken, beef-soup and crackers; discharge is diminishing.

21st. Walked down stairs to-day unassisted.

25th. Improving daily; ligature still very firm around carotid artery; fistulous opening diminishing.

July 1st. Fistula nearly closed; ligature less firm, but still tenacious.

4th. Removed ligature to-day, with a very slight effort; fungous growth about the wound in the neck; touched with nit. argenti.

8th. Fistula entirely closed; wound in neck nearly healed.

10th. Patient left the city this morning for her residence.

Upon examining the tumour after removal, it was found to consist, in part, of four considerable cavities, each capable of containing an ounce or more of fluid, imperfectly divided from each other by partitions of bone, or of an admixture of bone and cartilage, and lined by a very delicate serous membrane; and, in part, of the caseous degeneration so constantly formed in these affections. One portion, about two inches in length, being the

anterior termination of the disease, presented the appearance of healthy bone, though three or four times the natural thickness of the jaw at this part. In one of the cavities spoken of, was formed one of the molar teeth, in a state of caries, attached to the remains of its alveolar process.

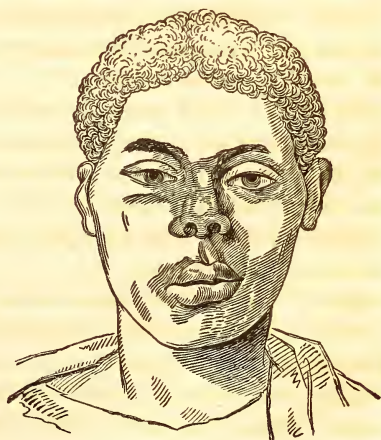
Remarks.—The ligature of the common carotid artery previous to removing the lower jaw-bone from its articulation, although condemned by high authority, and for the most part justly condemned, was, it is conceived, in this instance, properly resorted to. The depth to which the tumour extended in the neck rendered it highly probable, in the opinion of all who examined it, either that the branches of the main trunk had become diseased by firm and long-continued pressure of the bone, or had contracted such adhesions that any attempt to separate them from the diseased mass would have induced their rupture. And although neither of the conditions anticipated was found to have occurred, the enlarged state of the divided vessels and their multiplied number must, without the preparatory security resorted to, have exceedingly complicated the operation, and would, perhaps, have caused a fatal result from the exhaustion consequent upon the securing of the individual vessels as they were divided,—for in such deep wounds it is not always easy to discover the bleeding vessel, and the search is invariably harassing to the patient. The consequences of secondary hemorrhage, also, in case some untied artery should retreat and elude the search, are to be calculated.

I have had the gratification to hear, at this date, that the patient is in excellent health, and has resumed her domestic occupations.

The accompanying figure, taken twenty-five days after the operation by my accomplished young friend, Mr. Caton Woodville, represents her appearance at that time very accurately. I learn from her friends that the distortion of the mouth is gradually diminishing.

BALTIMORE, *August 1st, 1844.*

Fig. 2.

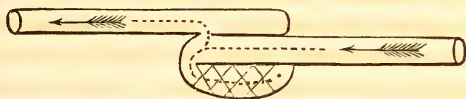


ART. IV.—*Two cases of Perineal Operation on the Urethra; in one case to relieve traumatic stricture, and in the other to restore the cystic portion of the canal, which had been completely obliterated.* By WASHINGTON L. ATLEE, M. D., Lancaster, Penn., Professor of Medical Chemistry in Pennsylvania College.

CASE I.—In the fall of 1842, William —, a mulatto, about 25 years old, entered the Lancaster county hospital, afflicted with a very troublesome obstruction in the urethra. He gave the following account of himself:—two years before, while riding on horseback, the horse fell with him, and he received a severe injury in the perineum. This was immediately succeeded by a copious discharge of blood, which continued, gradually diminishing, for three days, and after it had ceased, it was followed by a stillicidium of urine, which has existed uninterruptedly, excepting when there has been complete retention, ever since. The summer after the injury, there was a complete retention of urine, which a physician in Reading relieved with the catheter without much difficulty. Previously to the use of the catheter, a small tumour had been developed in the base of the scrotum, along the track of the urethra, and after its employment, this tumour rapidly increased to the size of an almond. Last winter, a surgeon of Philadelphia had operated on him with the stilet and canula three successive times, but without affording him any material relief.

The patient being even less intelligent than the common class of negroes, and his statements varying at different times, I cannot implicitly rely upon the accuracy or truth of the foregoing history. The following, however, was the condition in which I found him. The prepuce was very much elongated, and encircled by a string anteriorly to the glans penis, so tightly tied as to prevent the escape of any urine unless desired by the patient. Behind this ligature the prepuce was distended into a considerable-sized bag containing urine, which was continually accumulating from the bladder. Several times, during the day, he would relax the ligature and empty this reservoir, thus keeping himself dry and comparatively comfortable. In the course of the urethra, and within the base of the scrotum, an elastic tumour, about the size of an almond, could be felt. This could be observed enlarging with every effort to urinate, and after this effort had ceased, pressure upon the tumour would diminish its size, and at the same time cause a few drops of urine to escape from the penis. If the urethra behind this tumour were examined during these expulsive efforts, it was always found also much distended with urine, and yet the strongest straining could not effect a more rapid escape than a mere *guttatim* discharge. This dropping continued, also, involuntarily when the ligature was not applied, very much as it does

in cases where the bladder overflows. There was no obstruction to the passage of a sound until it reached the *posterior part* of the tumour, where it was stopped abruptly. If pressure were now pretty forcibly continued on the sound, the sensation communicated to the hand by the obstruction appeared to arise from the resistance of membranous structure, and that portion of the urethra traversed by the sound would be dragged back by the pressure. The sound could be felt occupying a position to the left of, and above the tumour, as may be understood by viewing the following diagram, made to illustrate the relative position of the tumour, with the anterior and posterior sections of the urethra, and also the course of the urine is indicated by the dotted lines and arrow-heads.



September 19th, 1842. Having secured my patient as for the operation of lithotomy, I operated as follows, in the presence of my colleagues, Drs. J. L. Atlee, and J. K. Neff, and of several medical students. A grooved sound was passed down to the obstruction, and taken in charge by my brother, and the scrotum having been elevated to its utmost extent, I cut through its posterior wall a little to the left of the raphe, and immediately came down upon the tumour. This having been laid open next, which was followed by the escape of a few drops of urine, I endeavoured to feel for the sound, but its *naked* point could not be discovered. The patient was now directed to expel some urine, which flowed through the wound, but instead of escaping from the urethra, at the posterior edge of the cut in the tumour, it came out at its most anterior point, as will be readily understood by examining the diagram. The knife had not yet reached the walls of the urethra, and of course was not yet in contact with the sound. Now cutting through the posterior section of the urethra, and then through the septum which divided the two portions where they overlapped, I came into the groove of the instrument with the point of the bistoury. Then slitting the septum to the extreme ends of the sac both ways, and thus laying open the track of the urethra, and destroying the cystiform character of the tumour, I withdrew the sound, and introduced a flexible catheter through the urethra into the bladder; closed up the wound over it with five gold needles and twisted suture, and put the patient to bed. The catheter was secured by attaching it to a gum elastic ring which surrounded the base of the penis.

During the operation, the left testicle fell out of the wound and hung down, suspended by the cord, until it was completed.

20th. The patient is doing well. He passed a chamber-pot full of urine through the catheter since the operation, but none through the wound.

21st. Passed the same amount of water through the catheter; some came through the wound last night and to-day.

23d. The needles were removed yesterday. The wound will not heal by the first intention. The catheter escaped last night, but was easily introduced again by the patient.

24th. The patient has become very troublesome and careless. The catheter escaped last night again, and remained out until 5 P. M. to-day. The gum-elastic catheter has been so much injured by the action of heat and urine, as to render it an unsafe instrument. The silver catheter, therefore, has been substituted.

Symptoms of cystitis now supervened, and the patient became very ill. This was rapidly followed by acute inflammation of the peritoneum and pleura, and the hopes of recovery were almost abandoned; but by prompt antiphlogistic treatment, associated with the remedies usual in such cases, these dangerous symptoms subsided by the 2d of October, after which my patient continued to do well.

As his general health continued to improve, the wound entirely closed, after which he was able to pass his water *per urethram*, in a full, continuous and vigorous stream. I cautioned him about introducing the catheter frequently, and particularly whenever he desired to urinate, in order to prevent contraction of the urethra, or infiltration of urine through the incised parts into the cellular tissue around it; but I am fully satisfied that he seldom attended to this. He, however, continued to do well during the following winter, and having become strong, hearty and capable of working, he was discharged.

Subsequently he was taken up as a vagrant, thrown into the Lancaster county prison, thence removed to the almshouse, and was placed as nurse over several patients afflicted with phlegmonous erysipelas. While thus engaged, he was seized with erysipelatous inflammation in the perineum and scrotum, which again blocked up the urethra, and terminated by leaving a fistulous opening in the scrotum. After his recovery this finally closed, and, although the parts were not in as good condition as before this attack, he had a much better use of them than before the operation. He soon after left the hospital, and I have heard nothing of him since.

The peculiar malformation of the urethra, in the above case, I have no doubt originated either through forced catheterism, or the employment of the stillet.

CASE II.—In taking charge of the hospital in February, 1843, I was applied to for relief by W— McG—, aged 52 years. He is a large framed man, apparently of good constitution originally, but now much emaciated by his harassing disease. The following history, which I think may be relied on, is given by the patient. He had been in the army of 1812, where he contracted gonorrhœa, under which he suffered about one

month. At the same time a phagedenic ulcer attacked the parts about the frenum of the prepuce, and in the course of a week opened into the urethra. This opening remained, and is at present one-third of an inch in diameter. Three or four years afterwards he experienced difficulty in making water, which he attributed to an attack of gravel. This continued until fourteen or fifteen years ago, when, in consequence of the symptoms becoming greatly aggravated, he applied to a respectable physician of Lancaster, who discovered the existence of a stricture, and after considerable difficulty, succeeded in introducing a catheter into the bladder. For one year after this, he did not suffer from the symptoms of gravel. They, however, again returned, and continuing to get worse, complete retention finally followed, requiring a resort to the catheter. Three years ago was the last time that the catheter could be introduced. One year afterwards, he took the small-pox, which was succeeded by a large abscess in the pelvic and lower abdominal region, and which finally pointed in the perineum, where it was punctured by a lancet, and discharged about two quarts of purulent matter. After this no water, excepting a few drops, passed per urethram, but all was discharged through several openings in the posterior part of the scrotum and in the perineum.

In his younger days he was intemperate, but for the last ten or eleven years he has led a rather temperate life.

He entered our hospital in the early part of last winter, during the attendance of Dr. J. K. Neff. Unable to support himself, a constant source of trouble to his friends, and offensive to all about him, this miserable individual came to the hospital to spend the rest of his days, having given up all expectations of relief. Dr. Neff attempted dilatation with bougies, but with very little advantage to the patient.

When the individual came under my care, I found him in the following condition:—The scrotum was distended to a considerable size by two large inguinal hernias, which had existed for four years, and had been produced by straining to make water. The posterior third of the scrotum was very much indurated and enlarged, having several fistulous canals pervading it and opening upon it. This mass, which seemed to possess the physical characters of pure scirrhus, was of the bulk of the largest-sized fist, incompressibly firm and unyielding, and extended backwards through the perineum to the anus, and forwards to within four inches of the anterior extremity of the urethra. A bougie could be passed into the urethra, beyond the anterior boundary of the hardened mass, and then, upon pressing it firmly, it appeared to become tightened and would stick. While the bougie was in this position, the thickening around the walls of the urethra could be traced to the depth of one inch and a half in thickness, along the left side of the bougie, and about three-fourths of an inch along its right side, and the inclination of the point of the instrument was evidently towards the right side, depending, no doubt, upon the greater deposition of scirrhus matter upon the

left side of the urethra, thus altering the proper direction of the latter. He was not able to retain his urine longer than two hours, and when he discharged it, it required the greatest efforts, and then it escaped from the several fistulous openings above referred to. In addition, he was also much afflicted with hæmorrhoids, a complaint of his younger days, having existed before 1812. The symptoms were always much aggravated whenever he became constipated.

I put him on the use of blue pill, conjoined with cremor tartar, as a laxative, with frictions of camphorated mercurial ointment on the diseased mass, and of unguentum gallæ on the hæmorrhoidal tumours. The piles soon disappeared, but the patient not perceiving any diminution of the scirrhus under the use of the unguent. hydr., applied the galls also to it, and with a very decided effect in reducing the enlargement, although this reduction had no effect upon the introduction of the sound; the finest flexible sound could not be introduced beyond six inches.

The patient, having heard of the operation in the first case, frequently begged of me to attempt to relieve him by a surgical operation, but I invariably gave him no encouragement. He finally became desperate, said that he would undergo any thing to be relieved, that he would rather die than live much longer in such misery, and became so urgent for an operation, that I determined to take his case into consideration. After maturing my plans, I called a consultation of the house-surgeons, who readily acceded to my propositions, and the 24th of April was fixed upon for the operation.

The patient, having been directed to retain his water for two hours previously, and secured as in the operation for stone, I proceeded to perform the following operation, assisted by my brother, and in the presence of several respectable physicians and students of medicine.

A curved staff, grooved on its convex edge, was introduced into the urethra as far as practicable, and taken in charge by my brother. The two hernias being reduced, and the scrotum elevated to its greatest extent, I made a deep incision about five inches long, commencing on the scrotum and continuing it on the raphe through its posterior third, and through the perineum, as far back as to the verge of the anus. This incision passed through some of the fistulous tracks, which were lined with a dense and shining mucous tissue, and also passed into an exceedingly dense substance, which grated under the edge of the knife precisely like genuine scirrhus structure. The point of the sound could not be felt until I had penetrated into this dense tissue about two inches in depth, and then I discovered it about one-quarter of an inch to the right of the mesian line. Now turning the edge of the knife in the direction of the sound, I struck its point, and found it rested in a complete *cul-de-sac*, from which, back towards the bladder, no permeable urethra, nor any remains of it, could be detected or traced. Having expected that at this stage of the operation, the only difficulty to encounter would be to make a section of the stricture, and thus

forming a communication with the posterior portion of the urethra, which would enable me easily to pass on the sound into the bladder, and complete the operation by introducing a large catheter, and healing the wound over it, I was taken somewhat by surprise, at meeting a mass of disease such as there existed. The corpus spongiosum, the urethra, from the point of the sound back to the bladder, and the tissue around it about two inches anterior to the point of the sound, the whole perineal tissues, the parts on the anterior wall of the rectum, and up to the arch of the pubis, all appeared to have degenerated into this indurated fibro-cartilaginous structure, to such an extent as to have considerably elevated the neck of the bladder into the cavity of the pelvis. The great difficulties of the operation now only commenced. After liberating the point of the sound, and making a free section of the supposed stricture, the parts were minutely surveyed and examined with a fine director, without discovering any path open to the bladder. Having nothing to guide us any further in the operation, I deepened the incision through the dense mass successively towards the pubis, prostate and recto-vesical space, probing carefully with my finger, and examining for an opening with the director after every stroke of the knife, until I had gone as deeply as prudence would permit; and still no avenue to the bladder could be detected. After this unsuccessful survey, I determined to make an artificial opening into the bladder, and for this purpose directed my brother to pass on the grooved sound through the wound towards the bladder, in the hope that the natural curve of the instrument might direct its point to the neck of the bladder, and thus serve as a guide for the use of the knife. The instrument was carefully carried in, and appeared to occupy a suitable position to guide a bistoury through the prostate gland into the bladder. Fearing, however, that the abnormal condition of the parts might have so altered their relative position, as to make the sound an unsafe guide for the knife, I took the precaution of first introducing my finger into the rectum. By this fortunate proceeding, I discovered the sound lying close upon the anterior wall of the rectum, and the necessity of being exceedingly cautious in the future steps of the operation. Withdrawing my finger from the rectum, I passed it through the wound until I fixed it against the arch of the pubis, then taking the sound from my brother into my other hand, I drew it out several inches, and, firmly depressing the handle, I again passed it in so as to elevate the point immediately behind the pubis, and satisfied myself as to its real position. Now, placing the bistoury in the groove of the staff, I deepened the incision towards the bladder, so as to admit the point of the index finger some distance in that direction: still I could discover no opening into the bladder, either with the finger or director. Between the point of the finger and the rectum, there still remained several strong, firm bands and a considerable portion of condensed tissue, which I thought best to divide, in order to enable me to reconnoitre more fully. Placing my finger again in the rectum, I severed completely, with a knife in the

other hand, all resisting and morbid structure, cutting until I felt the knife gliding upon the anterior wall of the gut. Having thus passed through all the condensed tissues, and secured ample space, I again probed with my index finger beneath the sound towards the bladder, until I struck against a ligamentous plate, which must have been either the triangular ligament, elevated by the diseased mass, or the pelvic fascia itself. With a director I again endeavoured to find an opening in the ligament leading to the bladder, but, after a patient search, was entirely foiled. Giving up the hope of finding any communication with the bladder, and almost despairing of being able safely to relieve my patient, I thought of a small trochar, about three inches long, with which I had fortunately prepared myself, and proposed using it as a dernier resort. Still taking the sound as a guide, I passed the point of the trochar up in contact with it, then sliding the canula beyond the stilet, until it rested against the ligamentous plate, I plunged the trochar in the direction of the bladder, as far as I considered it safe. On withdrawing the stilet, no urine flowed, so that I failed again in communicating with the bladder. I now passed a straight director through the canula, and found that it still encountered a resisting medium at the other extremity. Removing the canula and also the sound, and substituting my left index finger as a guide, I passed the point of the trochar directly up to the pubic arch, then raising the handle so as to lower the direction of the point to a horizontal line, I gradually sunk the instrument in until it was resisted, then making another plunge, my patient immediately cried out, "*that's in the bladder.*" Overjoyed at this expression, I withdrew the stilet in order to see the urine flow, but what were my chagrin and disappointment when none appeared? I again passed through the canula a small grooved director, which, detaching coagula that blocked up the instrument, caused a few drops of urine to trickle out, and to announce, without doubt, that it was in the bladder. The great depth to which the trochar had to penetrate to reach the bladder, may be known by the fact that the canula now lay imbedded far in the wound, with its rim close under, or rather within the arch of the pubis. In place of the director, I introduced a small gum-elastic catheter, through which urine flowed in drops. This was intended merely as a guide to the bladder, to remain after the removal of the canula, which was now slipped away, riding upon the catheter. A director was now passed into the bladder, with its groove towards the left side, when, with a Cooper's hernia bistoury, I divided the ligamentous bands and the descending fibres of the levator ani on that side; then reversing the instrument, I cut the corresponding parts of the opposite side. The point of the finger could now be introduced into the neck of the bladder, the hand gliding in between the separated lips of the wound. A large silver catheter, a full quarter of an inch in diameter, and specially constructed for this operation, was introduced into the penis, and passed easily onward into the bladder, from which there now flowed through the catheter, when aided by pressure upon the hypogastrium, nearly one

quart of water: thus completing the operation very much to the relief both of the patient and surgeon.

The catheter having been secured with tapes, in the ordinary way, the patient was put to bed, and cold water dressings were ordered to the wound.

The operation was performed between 11 and 12 o'clock, A. M.; he had passed water between 9 and 10; and when laid upon the operating table, he could scarcely retain his water any longer.

I visited my patient in the evening and found him quite comfortable. He had passed one pint of urine through the catheter at two different periods since the operation, and he could retain his water longer than before.

25th. Doing well; had a comfortable night; passed water four times, one quart through the catheter, none by the perineum. By a voluntary effort he passed a half a pint of urine, in my presence, in a continuous jet through the catheter.

26th. Not so well; chill this morning; severe attack of colic, and bowels distended with flatus; some tenderness on pressure in the epigastrium; tongue coated with yellowish fur, which, however, had been the case since the operation; pulse 124. Passed one quart of urine since yesterday morning, none by the wound. Ordered oleum ricini every six hours until free evacuations.

27th. Better; pulse 104; no tenderness in the epigastrium; wound has a healthy appearance; oil operated six or seven times, and without pain; it, however, irritated the stomach and kept up frequent vomiting; power of retaining urine greatly increased; matter flows out of the urethra around the catheter.

28th. Pulse 84 to 88; tongue coated with a loose, whitish fur, and disposed to clean; irritability of stomach continues. Ordered effervescing draughts of soda every two hours.

29th. Doing well; tongue clean and stomach quiet. The catheter was removed to-day for the first time, and it was accomplished easily and without pain. It was blackened by oxidation throughout the whole track of the wound. After polishing the instrument I attempted to introduce it again, but after getting it in as far as the original *cul-de-sac*, it was suddenly stopped. I endeavoured, for some time, to overcome the difficulty, and almost despairing of success, it at last occurred to me that the passage was not in a direct line; that the mesian line was the hypothenuse of a triangle which had its vertex at the point of the *cul-de-sac*. With this in view, I gave the point of the catheter the necessary inclination, and it glided easily onwards, and almost fell into the bladder.

May 6th. Removed and returned the catheter with the greatest ease. Wound suppurating and granulating finely.

10th. To-day urine escaped from the wound for the first time, and only during the efforts to urinate.

11th, 4 P. M. The catheter came out last night, and the patient was unable to return it, in consequence of which the urine passed by the wound. Examining the instrument I found it completely clogged up, which will account for the escape of urine through the wound yesterday, and probably also for the expulsion of the catheter. It was introduced again without difficulty.

24th. No urine escaped by the wound after the last date. The catheter was frequently removed, cleansed, and returned by the patient himself. No water was permitted to leave the bladder excepting through the instrument, which was always kept corked, and removed *ad libitum*. The wound is perfectly healed; the condensed tissue has nearly all been absorbed; and the fistulous openings have disappeared.

June 4th. Contrary to positive directions, the patient very imprudently passed urine to-day without the catheter. He made it in a full stream and with force. It, however, resulted in no injury to him, no urine having been extravasated into the surrounding tissues.

18th. Began to leave out the catheter for short intervals, but was ordered to employ it in urinating.

21st. Leaves the instrument out all day, retaining it at night, and using it while passing water.

28th. Patient desires to leave the hospital and go to work. He states that for the last week he has made water in the natural way; that he can retain it as long as he ever could; that he has as full and perfect command over it as ever; that he can introduce the catheter with ease by observing the angular offset in the passage; that he is in better health than he has been since 1812, and in quite as good health as ever; that the hemorrhoids never returned; and that he believes he would not have lived three weeks longer if it had not been for the operation.

I examined the parts, found the hardness and thickening of the perineum had entirely disappeared, but some induration of the scrotum still remained, which the patient does not attribute to the stricture, but to an old induration resulting from an injury received fifteen or sixteen years since in mounting a horse, when one of the testicles swelled as large as a fist, and was so sore for a month that he could not bear the touch of a finger.

During the first few days after the operation, the patient was kept on absolute diet. So soon, however, as the danger of inflammation was over, and the wound began to suppurate and granulate freely, he was allowed good substantial nourishment, after which his general health and appearance rapidly improved.

June 30th. The patient was discharged and ordered to introduce the instrument daily for several months

ART. V.—*Isopathia: or the Parallelism of Diseases.* By JOHN M. B. HARDEN, M. D., of Liberty County, Georgia.

THE disposition of diseases to “anastomose with one another,” or to wear each other’s livery, has long been remarked by some of the most eminent medical observers. Sydenham, Balfour, Cleghorn, Lind, Clarke and Rush, have all recorded the fact in their notices of epidemic fevers. Indeed, the former is said to have insisted on the doctrine, that “epidemics of continued fevers, although *resembling each other in respect to many of their symptoms and general characters, are often very different from each other*, for a mode of treatment which is useful in one, may be decidedly pernicious in another.”* Hence the importance which he has attached to the epidemic constitution of the air, in determining the true character of these diseases. Hunter† declared that “diseases of the *same specific nature not only vary in their visible symptoms or actions, but in many of those that are visible*, arising, probably, from peculiarity of constitution and causes, which will make the effects of application vary almost in the same proportion.” Dr. Alison‡ says, “when changes in the structure of the body, that take place in the course of disease, are examined during life, and more especially after death, it appears that *different combinations of symptoms are often apparently excited by the same fundamental diseased action, and, consequently, found in connection with the same alteration of organic structure*; and again, that *very different alterations of structure may be attended, in different individuals, by symptoms, the greater number of which are very nearly the same*.”—and Andral,§ in his recent work on Pathological Hæmatology, has advanced the same sentiment. “These various facts,” says he, “are not inconsistent with one another; they only throw more light on one of the *most important of medical truths*, namely, that *two diseases may have identical symptoms without being of the same nature*, and that however close their resemblance, they may still require different modes of treatment, because very different conditions of the economy may give rise to or maintain them.”

So great a bar does this substitution of one form of disease for another offer to a correct diagnosis and classification, that it is not surprising that Brown and Rush should have adopted the maxim, “*Nosologia delenda*,” nor that the latter should have declared that, however varied morbid actions may be by their causes, seats and effects, they are all of the same nature,” and that “to describe them by any fixed or specific characters, is as imprac-

* Med. Chir. Rev. 34th, 601.

† On the Blood, 2d, 53.

‡ Outlines of Pathology.

§ On the Blood in Disease, p. 129, translation by Meigs and Stillé.

ticable as to measure the dimensions of a cloud on a windy day, or to fix the component parts of water by weighing it in a hydrostatic balance.”*

We might cite other authorities in support of the same general truth, but this subject has never received that particular attention which it really deserves. There can be no doubt that this is the true ground of most errors in the diagnosis and treatment of diseases, and of the many differences of opinion among medical men concerning the nature and proper treatment of the *same supposed disease*, as well as the various success of the *same remedies in the same supposed cases*. It shall be our object, therefore, in the following remarks, to bring this matter distinctly before the notice of the profession, by attempting to show that there are many symptoms and groups of symptoms which have been, and still are, regarded as distinct diseases by practitioners, and arranged as such by systematic writers, which may be referred TO THE SAME PATHOLOGICAL STATE OF THE SYSTEM, AND MAY MUTUALLY REPLACE ONE ANOTHER IN THE SAME OR IN DIFFERENT INDIVIDUALS. To this law or feature of disease, we have applied the term, ISOPATHIA,† or *Isopathy*, and we proceed to point out as briefly as we can some cases of this parallelism from our own as well as from the observations of others.

In order to give method to our remarks, we beg leave to divide diseases into the following *generic TYPES*, under which we will treat of the individual species and their *modifications*,—*Febrile Types*, *Inflammatory Types*, *Purulent Types*, *Tuberculous* or *Strumous Types*, *Scorbutic* or *Hemorrhagic Types*, *Exanthematous Types*, *Hydropic Types*, and *Gouty* or *Podagric Types*. We will confine our remarks in this paper to the first or febrile types, reserving what we have to say upon the others for some future communication.

Febrile types.—Fever is confessedly the most common form of disease, to which the human system is subject. Almost all diseases are more or less connected with it, and it is even probable that all morbid forms have their prototype in some essential fever. This seems to have been the opinion of many, if not most of the older writers. The essentiality of fever was the doctrine of Sydenham, Morton, Morgagni, Fordyce, Cullen and others. Marcus, we believe, was the first who identified them with inflammation,

* *Inquiries and Observations*, 3d, 34.

† *ισον παθος*, æqua affectio. The term *isomerism*, in chemistry, while it furnishes an analogy in etymology, affords, also, a good illustration of our use of the above. It is known that there are many inorganic bodies with different external appearance, which consist of the same elementary parts, while others, essentially distinct in composition, present the same external form. To these last the term *isomorphic* has been applied, and even here the analogy holds in disease, for, as we have seen, there are many so called diseases, with the same external form or type, so far as regards their seats and symptoms, which are still pathologically distinct. To such diseases the term *isotypic* might be very properly applied. Diseases, then, may be *isopathic* and *heterotypic*, or *esotypic* and *heteropathic*, as we hope to make appear in the course of our remarks.

and seated them in the blood-vessels. Clutterbuck afterwards fixed their seat in the head. Mills placed them indifferently in the head, the lungs, the liver, the stomach, or in any other organ which happened to be attacked with inflammation. Edward Miller directed the attention more particularly to the stomach as the seat of these fevers, and this view was adopted in France by Prost,* Caffin, Alard and Petit, and, under the fostering genius and unremitted labours of M. Broussais, has been extensively diffused in modern times. But at present there appears to be a tendency among medical men to revive the former doctrine, and the essentiality of fever finds advocates in such men as Andral, Chomel, Tweedie, Christison, Copland, Alison and others. As we have already hinted, we are inclined to adopt this view of fever, although we are willing to admit that, in most of the essential fevers, some lesion of the alimentary canal is very generally an attendant. "These lesions of the viscera, however, whether of the cranial or of the thoracic or abdominal cavities, are all secondary or consecutive phenomena of the disease, their occurrence being attributable rather to the cotemporaneous influence of other atmospheric agencies, to the idiosyncrasy, habits, and previous state of health of the patients affected, or perhaps to the differences in the nature and degree of the ærial poison that has acted upon the system."† The discrepancy among authors in regard to the seat of the same fever is sufficient evidence that they *have no determinate or invariable seat*. "If we were to judge," says Andral,‡ "by post-mortem examinations only, we should often believe that inflammatory, bilious, catarrhal or mucous, typhoid or adynamic, nervous or ataxic fevers were *one and the same disease*."

Fevers have been variously divided and arranged by different authors. The most common division has been into intermittent, remittent and continued, including under the last the synocha, synochus and the typhus. We prefer to divide them into the intermittent, synocha or inflammatory and typhus, and our reasons for this will appear in the course of our remarks. We shall first consider the intermittent or marsh fever, as it has been called. We believe it is generally conceded that the intermittent and remittent are only different types of the same fever. Sydenham§ believed in this identity, and so did Dr. Rush.|| Dr. Cullen¶ made no distinction between them. Dr. Parr** says, "Intermittents and remittents arise from the same causes, are relieved by the same remedies, and pass into each other," and Dr. Good,†† who wished to make a specific distinction, has given the same proof of their identity. Dr. Fothergill‡‡ speaks of remittents becoming intermit-

* Broussais, Exam. des Doctrin. Med., tom. 2d, and 4th passim.

† Med. Chir. Rev. vol. 40th, 516.

‡ Ibid. 23d, 236.

§ Exam. des Doct. Med., tom. 2d, 96.

|| Med. In. and Obs.

¶ First Lines.

** Med. Dict., Art. Fibris.

†† Study of Med., 2d, 48, 69.

‡‡ Med. Chir. Rev., 26th, 72.

tents, and being cured by bark. Dr. Booth* says, "It is transitions of this nature that justify the idea of the types of these fevers being modifications of one disease, varying in the same individual, and frequently assuming a difference of character in successive seasons, gradually approximating to a typhoid form, without any difference of cause beyond atmospheric influences." Dr. McDivitt,† in his able report of the Kent and Canterbury Hospital, has also pointed out this connection. Dr. Craigie‡ is disposed to allow the "*interchangeable nature, the identical origin, and the simultaneous existence of intermittent and remittent.*" Drs. Bright and Addison§ admit that they are very closely allied, having the same origin, and in many respects the same phenomena, the chief difference consisting in the character of the paroxysm. M. Maillot,|| the chief physician of the Military Hospital at Bon, in Africa, in speaking of the fevers of Algiers, says: "Whoever will consider the facts now stated, cannot hesitate surely to admit, that the remittent and continued fever of the hot season, in such a climate as that of the northern coast of Africa, are in truth intermittent fevers, complicated with a local mischief, which has the effect, sometimes, of merely obscuring the features of the original disease, and at other times of masking them altogether, so that they cannot be recognized;" and again, in speaking of the treatment, he holds the following emphatic language:—"C'est l'idée qu'on se formera de ces intermittentes, de ces remittentes, et de ces fièvres continues se succédant tour à tour se remplaçant, se chassant, puis reparaissant, tournant, pour ainsi dire, dans le cercle annuel; c'est de la filiation que l'on verra ou non entre ces maladies si diverses en apparence, *se indentiques pour le fond* que dépendra le choix d'un traitement vrai ou faux." From our own observations of these fevers, we are disposed unhesitatingly to adopt the opinion of Rush, that the tertian is the original type, and the double tertian the form in which all our autumnal remittents present themselves, and the difference in the intermissions depends upon the lengthening or shortening of the paroxysms, so as to run into each other or make a complete interval.

But it is to Dr. McCulloch¶, of England, that we are mainly indebted for a clear exposition of this connection, as well as the relation of this fever with other diseases, hitherto regarded as specifically distinct, and to this author we owe many of the views set forth in the following pages. In order to point out more clearly this parallelism, we will divide the pathognomonic symptoms of this fever into the *depressing* or *sedative*, the *neuralgic* or *painful*, the *convulsive* or *spasmodic*, and the *critical*. The vascular excitement and functional disturbances in general cannot be considered

* Med. Chir. Rev. 26th, Life of Armstrong.

† Am Journ. Med. Sci., 46th, 414.

‡ Am. Jour. Med. Sc. 46th, 414.

§ Elements of Pract. Med.

|| Med. Chir. Rev. 26th, 510.

¶ On Remittent and Intermittent Diseases, where he says, they are virtually the same, p. 59.

pathognomonic, since they occur to a greater or less extent in almost all forms of disease. So, too, the researches of Andral and Gavarret have shown that the state of the blood in these fevers is *entirely negative*. The dissolved or putrescent state of the fluid which is found in some cases, is common to most diseases, and may either be primary or come on in their progress. This condition of the fluids, however, is an important complication, and is intimately connected with those malignant forms of fever and other diseases which we will notice as we proceed.

We go on now to notice those symptoms or groups of symptoms which are *isopathic with one another and with this fever*, and often *replace it either wholly or in part*.

Symptoms of depression or sedation.—These symptoms are all connected with what is known as the cold stage or fit of this fever,—and our object now is an analysis of the modes in which this cold fit may present itself. The degree of coldness manifested in this stage may vary from a mere sensation on the part of the patient to a coldness of the surface appreciable by others. Sometimes the sense of coldness amounts to a mere “aura” in some particular spot. We have heard it referred to the head and to the side. Dr. McCulloch says, “The sensation of cold may be so partial as to occupy but a limb or a single spot, and even but for a few minutes; while, if more universal, it may be equally short and slight.” These symptoms may make up the whole of the patient’s disease, so far as is apparent to the physician; and in such cases they are usually regarded as nothing more than a form of hysteria. The same may be said of the “*aura epileptica*,” which we are inclined to regard as a symptom of this character.

The cold fit may also show itself in simple drowsiness, which is very frequently the precursor of fever in children; but by far the most alarming and fatal form in which this stage is ushered in, is by *coma* and *apoplexy*. Fevers connected with soporose, apoplectic and paralytic symptoms, forming the “*fièvres intermittentes perniciosæ*” of the French, and the “*febres perniciosæ*,” of Torti and other authors have long ago been noticed. Werlhoff* has found examples of such fevers in the works of Galen, Paulus Eginetus, Ætius, Amatus Lasitanus, Avicenna, Prosper Alpinus, Lomnius, Eugalinus, Forestus, Bonetus and Cohansen.—Ramazzini describes the same fevers as happening at Rome and Lancisi and Torti at Modena—Sydenham, Werlhoff and Morton were the first, however, who regarded them as modifications of intermittents. In our own climate, it sometimes happens that intermittents come on in this form. “Some years since, autumnal fever appeared in the interior of the southern states in this form, and was, in many places, denominated the ‘cold plague.’” We have never seen a particular description of this fever, but from what we have heard, we conclude that it was identical with the Italian form of this disease.

* Exam. des Doctrin. Med. 2d, 177.

† Daniel on Fever.

As in epidemics so in particular sporadic cases, the first symptom of an intermittent or remittent may be an apoplectic seizure—which may constitute the whole apparent disease—and should no time be given for a development of its true character, the case might be treated as one of apoplexy, and the patient die under that treatment. Andral, in* his “Clinique Medical,” gives a very interesting case in point. Whilst considering the subject of “masked intermittents,” he details the case of a patient who exhibited all the phenomena of “intermittent apoplexy,” which, in its return, observed the same regularity as the fevers of this name, and presented itself uniformly and regularly with precisely the same types. The sulphate of quinine was administered, and the individual perfectly recovered. A similar case is recorded in the *Journal des Connaissances*, and republished in the *Medico-Chirurgical Review*. The case is given by Dr. Combes,† and was, as in the preceding, cured by the exhibition of quinine.

The apoplexy may be replaced by some form of paralysis, either as hemiplegia, paraplegia or local palsy. Some years ago I attended a child in fever, in whom there was complete hemiplegia, and continued until the termination of the fever, which was cured by quinine. The palsy may be confined to one or more muscles. Ramazzini noticed it in the tongue in the fevers at Rome, producing complete aphonia. But for fear of prolonging our remarks beyond our prescribed limits, we would refer to the work of McCulloch, where this subject is fully treated, and pass on to the

Painful or neuralgic symptoms.—In all diseases there are three sources of pain which it is very important to distinguish. It may arise either from a partial or general contraction of muscular fibres, or from a peculiar state of the nerves themselves, or, lastly, from that state of parts which obtains in inflammation. It is of the purely neuralgic that we design to speak at present. The most usual seat of pain in our fevers is the back and head. We will not pretend to affirm that these pains are always neuralgic, but we cannot help believing, with McCulloch, that they are often of this character. The alternation of the pain in the back with common neuralgia of the face, a case of which is given by him, leaves no doubt upon this subject. The observations of Kræmer and Grossheim‡ upon this symptom of intermittents, tend to corroborate the idea of its connection with the spinal nerves. These pains are more or less present in every case of this fever, but sometimes they assume a prominence which causes them to be regarded like other neuralgia as specific affections, under the names of lumbago, sciatica, cephalalgia, hemicrania, &c. The work of Dr. McCulloch, however, has turned the attention of medical men to their connection with intermittents, and we have many cases recently recorded

* Med. Chir. Rev. 27th, 103.

† Ibid. 42, 219.

‡ Am. Jour. Med. Sci. vol. i., N. S., 210.

substantiating his views. Dr. McDivitt, in the report already alluded to, says, "that certain neuralgic affections originate in the same cause which produces intermittent fever, cannot well be doubted; for they prevail in the same localities with it, put on the same intermittent form, and are cured by the same remedies."* In the "*Bulletin Général de Thérapeutique*," there is a paper on intermittent neuralgia, in which the writer says, "most cases of neuralgia have an affinity more or less distinct and decided with intermittent fevers." "Within the last six months there have been observed at Paris a number of cases of masked aguish neuralgia, which, on many occasions, have simulated other diseases, and whose true nature, therefore, has been not unfrequently mistaken." The editors of the *Med. Chir. Rev.*† say, "that an intimate connection exists between intermittent fevers and various forms of neuralgia, is sufficiently obvious from the genuinely periodic character of numerous cases of the latter disease." "It is scarcely necessary to add that the same remedy, bark, which is a specific for the one, affords as infallible relief for the other;" and they refer, "for some excellent remarks on the analogy between intermittent fever and neuralgia," to Dr. Billing's "*First Principles of Medicine*," a work which we are sorry we cannot consult. M. Piorry says,‡ "if we consider the intermittent and periodic character of neuralgia, in connection with that of paroxysmal fevers, the manner in which both diseases yield to sulph. quinine, the frequent coincidence between certain neuralgic and paroxysmal fevers, we shall be led to the conclusion, that the 'point de départ' of these fevers is most probably in the nervous system."

These neuralgic symptoms show themselves in various parts of the body. Dr. McCulloch has pointed out the connection of *tic douloureux*, and a form of toothache with intermittent fever, and cases of these affections successfully treated by sulphate of quinine, are of frequent occurrence. In our autumnal remittents, I have observed the pain of the back to be suddenly replaced by some form of gastralgia, and this last by headache. In the summer of 1840, I was attacked with fever attended with most severe headache of this character, and great irritability of the stomach, and I then noticed that the vomiting was preceded by pain in the stomach, which relieved the headache; the vomiting would relieve the gastric pain, when suddenly the pain in the head returned with renewed violence. This state continued for some time, when, at the suggestion of a friend, now no more, I took a dose of sulph. morphia, which restored me as if by magic. A similar case of metastasis of neuralgia is given in Hufeland's *Journal*.§ The pain passed from the face to the abdomen, back again to the face, and then to a spot over the left hypogastrium. M. Piorry regards the pain in the

* *Med. Chir. Rev.* 35th, 545.† *Ibid.* 38th, 206.‡ *Ibid.* 43d, 193.§ *Med. Chir. Rev.* 30th, 236.

spleen or splenalgia as neuralgia. We have some reason to suspect that there are pains in the liver, (hepatalgia,) and of the ear, (otalgia,) which are of this character. But we have said enough upon a point which "affords much curious matter for speculation," and take up the SPASMODIC OR CONVULSIVE SYMPTOMS. The most obvious convulsive motions which occur in our intermittent fevers, are brought before our notice in the form of rigor; but a true rigor is not always present, and then the most of the reaction is developed in some other form of spasm or convulsion, which *replaces the rigor or becomes a substitute for it*. This convulsion may be either very general or very local, or may be of a tonic or clonic character, and I believe this may be laid down as a law in intermittents, that in proportion to the local developments of these convulsions in one part or tissue of the system, is its diminution in another. Thus supposing, with Dr. Rush, that the vascular excitement is nothing more than a convulsion of that system, if the muscular contractions be *general, violent and long-continued*, the subsequent arterial excitement will be less *violent and of shorter continuance*.

We have no doubt that a rigor, in some form or other, may always be detected in these fevers, but in some cases the evidences are so feeble as to make the diagnosis very obscure. We will begin with those local symptoms which we suppose to replace the rigor. The most feeble muscular contractions which we have ever noticed with any reason for believing them connected with fever, have consisted in twitchings of a muscle or part of a muscle. We are aware that we subject our observations to a suspicion of incorrectness, when we make this remark, but we hope that we may not be altogether condemned without good evidence against us. We have known these twitches to take place in portions of the external oblique. In our own case, we believe we have been warned of approaching fever by these twitches over the right hypochondriac region. We have been consulted in a case where it was confined to the pyramidalis, and was more of the nature of spasm, for it appeared in the form of a tumour, and we have known a spasm of a portion of one of the recti abdominis, mistaken for a tumour which we have supposed was of the same nature. In the case of contraction of the pyramidalis, we inferred its connection with intermittent, because it had supervened upon an attack of fever, and was itself of an intermittent character. The "globus hystericus," we think, is a case of the same kind. These spasms may be temporary, and pass off without any more serious disease, or they may become permanent in some muscle. Thus we may suppose to originate the torticollis or wry-neck.

Another symptom which we have known to replace the rigor, is a spasmodic cough. We have seen several cases, in which this cough always preceded the exacerbation of fever. The spasm or convulsion here was most probably confined to the diaphragm alone. An interesting and instructive case, where this cough seemed to be the chief disease, has been recorded

by M. Bricheteau,* in the "Journal Complimentaire." The disease was intermittent and cured by quinine. Dr. McCulloch thinks, and with great probability, that a form of pertussis or whooping-cough may be symptomatic of marsh fever. Sometimes the convulsion may affect the heart alone, giving rise to palpitation. It is very certain that this affection may exist for a long time without any organic affection, and the case which is given by Dr. McCulloch,† in which the palpitation alternated with neuralgia and quotidian *intermittent*, renders it highly probable that it is sometimes a substitute for this fever.

There is more ground, however, for believing that a form of asthma may replace the rigor in which the respiratory muscles are the seat of the convulsion. Dr. McCulloch notices a case related by Strack, which he considers was of this nature. Dr. Combes‡ has given a case of this kind in his own person, and Dr. Simon has related three cases, in each of which a cure was effected by the use of quinine. The periodic nature of asthma, which is not organic, and the fact that the best mode of preventing a recurrence of the paroxysm, is the use of the remedies for intermittent fever, prove almost conclusively that it is isopathic with it, and may become a substitute for it.

We have one word to say in relation to hiccup. In the *Journal des Connaiss., Med. Chir.*, a case is given of this affection in a man "while recovering from an attack of ague." A variety of antispasmodics and other remedies were used without effect. At length suspecting that, although all the other symptoms of the ague had ceased for some time, this convulsive affection of the stomach might somehow be connected with it, the medical attendant administered a large dose of quinine in an enema. A few hours after it was given, the hiccup ceased almost entirely, but it again returned as violent as before, next day. The quinine was again ordered, and with equally happy effects; and by persevering in its use for a few days, the symptoms did not return."§

Another part in which this spasm or convulsion shows itself, is in one or more of the intercostals, producing the affection known as pleuralgia or stitch in the side. It appears to me that the pathology of this affection has been most wonderfully mistaken. It has always been regarded as rheumatism, and is so considered even by Dr. McCulloch. But the suddenness of the attacks and the accompanying symptoms sufficiently indicate its true *spasmodic* character. Pleurodynia has often been confounded with true pleuritis, and, from incorrect treatment, no doubt passes into a form of pleurisy, whose termination is in effusion of serum, and, if the patient recovers, that "contraction of the chest," which is noticed by Laennec,|| attends him through the remainder of life. "The greater number of individuals," says

* *Med. Chir. Rev.* 23d, 217.

† *Op. cit.* page 166.

‡ *Med. Chir. Rev.* 43d, 220.

§ *Ibid.* 40th, 192.

|| *Treatise on Diseases of the Chest*, translated by Forbes, p. 131.

Laennec, "in whom I have detected this deformity, attributed it to some severe and long-continued disease of the chest, the *exact character of which had never been ascertained.*" Spasm of the intercostals is a very common affection among the negroes in our climate, and the pain in the side is often the chief and most distressing symptom, the febrile excitement being, in most cases, obscure, although we believe invariably succeeding. That it is often merely a symptom of intermittent, we have no doubt, although, in the language of McCulloch,* "having stated this common fact, I am not of course about to maintain that every pain in the side belongs to this fever, but I have seen cases where there could be no question on that subject, and where the most serious evils have followed the erroneous view and the wrong practice." We conclude what we have to say upon this point of our subject, by offering the suggestion that, in cases where this muscular spasm becomes extreme, it offers that form of disease known as *pleurosthotonos* or *tetanus lateralis*.

And this brings us to the consideration of that general *spasmodic disease* whose pathology has been badly understood, but which we have very little doubt is often intimately connected with the *cold stage of intermittents*. Storck mentions tetanus proceeding from fever.† Dr. Rush‡ says, that tetanus is sometimes a symptom of bilious remittent or intermittent fever, and that it may be cured by the same remedies. In speaking of the influence of an epidemic over other diseases, he says, "that yellow fever sometimes puts on the form of tetanus." He afterwards mentions two cases which he witnessed, occurring in yellow fever, one of which was general. Dr. Caldwell,§ in a note under the head of tetanus, in Cullen's First Lines, mentions a variety or modification of tetanus, which assumes an intermittent character; and he says, "he does not recollect to have seen a case of tetanus in which the patient was free from febrile action." But by far the most interesting case of this kind which has come to my knowledge, is given by M. Dance,|| in a memoir published by him in the "Archives Générales," in which the tetanus assumed the intermittent type, and the accompanying fever had the characters of the infantile remittent, and sometimes the form of an almost regular intermittent, so much so that M. Dance was inclined to view the "muscular affection as a form hitherto unknown, of intermittent disease caused by miasmatic influence."

We have not had many opportunities of observing this disease, and therefore must speak with caution, but we think that in two cases which have come under our notice, the tetanus appeared to be connected with our climate fever. Occurring at the same season, assuming, sometimes, the same intermitting type, and having the same remitting or intermitting fever, and cured often by the same remedies, it appears to me difficult to resist the

* Op. cit.

† Inquiries and Observations, 1st, 252.

‡ Med. Chir. Rev. 29th, 505.

§ Parr's Med. Dict. Art. Tetanus.

|| Caldwell's Cullen, vol. 2d, 143, 145.

conclusion, that it may replace the *rigor of the cold stage of intermittents*, and this seems true even of the traumatic variety, for it is plainly evident that *no wound* can of itself bring on the disease, without the concurrence of other more important causes; but let it be here, as elsewhere, borne in mind, that two diseases may be entirely *isotypic* without being *isopathic*, and, therefore, that remedies which would be useful in one, may be useless or hurtful in the other.

There are two other modes in which the rigor may manifest itself, which we will mention in connection. These are first, by a spasm of the muscular coat of the bowels, producing a form of colic, and in the other the convulsion is confined to the diaphragm and abdominal muscles, giving rise to vomiting. We have witnessed these symptoms sufficiently often to have satisfied ourselves that they often replace the rigor. They are common attendants upon our climate fevers, and I fear have often been mistaken for gastritis and enteritis, and *thus improperly treated*. I have seen both these symptoms (pain in the bowels and vomiting,) come on regularly at certain periods of the day, always presaging and preceding the rise or exacerbation of fever, so as to make mistake in regard to the position they occupy among the symptoms of the disease impossible. Dr. McCulloch says, "It is not unusual for nausea or vomiting to come on before the period of fever is finished, and *far more generally in the cold fit*, which it sometimes terminates, and, as I shall show more particularly hereafter, when the symptom is conspicuous compared to others, there is produced a variety (of fever) to which the term *emetica* has been applied," (p. 124;) and again, "I have already remarked, that the ordinary paroxysm of an intermittent sometimes terminates in vomiting, whilst nausea also occurs in them as in the chronic remittent, often very durable, and forming a distressing addition to the other symptoms." Sometimes the vomiting "becomes the most conspicuous symptom, or even the only one which the patient may notice; when inattentive practitioners are subject to mistake it for an original disease, dependent on some mysterious cause, or to assign a wrong one for it." (P. 165.)

Passing over some other local affections of a more questionable nature, the last which we shall mention under this head is convulsion. This symptom in children is often a substitute for rigor; indeed, I lay it down as a rule, that *the rigor of an adult is the convulsion of a child in our climate fevers*. Children under five years of age never, according to my observation, have a rigor in any other form, and so certain am I of its identity, that I have been able to predict the probable time of its occurrence forty-eight hours beforehand, and the result has verified my prediction. The danger from a convulsion is not in proportion to its violence, but only as an indication of a disposition to a *false crisis*. If *the skin and kidneys act freely*, the succeeding fever is generally mild. Convulsions preceding or accompanying fevers have often been noticed. Dr. McCulloch speaks of them, and in an account of the autumnal fevers of Amsterdam, during the year

1834, by Dr. Nieuwenhuys,* published among the transactions of the Provincial Medical and Surgical Association, they are mentioned as occurring in children at the commencement of the fever. But a more interesting and proper place among the symptoms of fever, has been assigned to them by Dr. Moliere,† in a paper “on intermittent affections with short periods,” published in the “*Mémoires de l’Académie de Médecine*.” He says in relation to them, “at present, whenever I am called to an infant afflicted with convulsions, which *are not clearly symptomatic*, if these occur, as is usually the case, by crisis or attacks, separated by longer or shorter intervals of repose, I look upon the affection as an intermittent, and whether the interval consists of but one or of several hours, I give the quinine, and I can declare that I have often been enabled to arrest the disease in the most ready and unhoped for manner.” Similar observations, it appears, have been made by MM. Piorry and De Lens, who also recommend the employment of quinine. There is reason for believing that even in adults the rigor may sometimes assume the violent form known as epilepsy. This has been suggested by Dr. McCulloch, and I know of one case which seems to corroborate this view—but I do not wish to cumber these remarks by a detail of cases. It appears probable that the positive forms of hysteria might be robbed of half their mysterious character, by studying them in connection with intermittent fevers. We conclude what we have to say under this head, by proposing the following question, whether the diseases of children, known as laryngismus stridulus and thymic asthma, may not be a modification of the rigor of intermittents?

CRITICAL SYMPTOMS.—We come now to a more questionable mode of exhibition on the part of this fever, and yet it appears to me probable that it is among the most common in our climate. I am inclined to apply the remark of Celsus on another subject to intermittents, that “*nusquam non est*,” or in other words, that intermittents and remittents, although, perhaps, more common during the hot seasons of the year, are not confined to them exclusively, but *that the fevers of summer become the phlegmasiæ of winter*. The most usual mode of termination of a paroxysm of intermittent and remittent, is by perspiration or diuresis. If from any cause these enunctories refuse to act, then a “*false crisis*” takes place, and the internal organs suffer by what may be called a transfer of function, giving rise to local affections known as inflammations. Their connection with the “marsh fever,” however, may be made apparent by considering the epidemic constitution of the air, the passage from this fever to those local diseases, and the tertian or double tertian type of the accompanying fever. Let us not be understood as saying that all local diseases are of this character; by no means—but there are many local determinations which are of this kind. The particular points at which these determinations may take place, are

* Med. Chir. Rev. 29th, 132.

† Ibid. 43d, 301.

often indicated by the previous symptoms, such as the neuralgic pains and the convulsive actions which replace the rigor. To these determinations we would not apply the term inflammation, because, as we shall hereafter define the term, it would be inappropriate, although, under its ordinary acceptation, they are inflammatory; but there is a most important difference in a therapeutical point of view, for in one the local affection may be removed by means which would aggravate it in the other. Dr. McCulloch* says, "in remittent fever there may be present inflammation of the brain, of the lungs, of the pleura, of the throat, (anginæ of different characters,) of the bronchial membrane, (catarrhs,) of the stomach, the intestines, the liver, the spleen, the peritoneum, of internal organs or viscera, and also of the muscles and ligaments, (rheumatism,) all of them varying in their intensities in whole epidemics, as in individuals, and thus at one extreme producing cases, which, under peculiar characters also in the essential fever, may simulate or almost equal cases of phrenitis, pleuritis, &c., calling for material variations in practice, and not unfrequently becoming grounds of most inconvenient disputes among physicians not sufficiently aware of *the nature of what they had not witnessed*." To me it appears evident, that many diseases attended with local heat, redness and tumefaction, have been included under the term inflammation, which are pathologically very distinct species, as we hope to point out when treating of the inflammatory types, and that one type or form of this local affection is isopathic with intermittent fever. Such, we have reason to believe, is the case with many catarrhal affections, including, probably, the epidemic form of influenza, and each some of the forms of *dysentery* and *diarrhœa*—which last Dr. Johnson considers to be a real catarrh of the *mucous membrane of the bowels*.

In corroboration of these general views I cannot deny myself the pleasure of transcribing the following remark from the "*Gazette Médicale*."† "It is not, however, to be denied that these local affections of one of the great cavities are not unfrequently altogether dependent upon an aguish cause, and are to be treated on the same principles as intermittent fevers; in other cases they are to be considered as inflammatory or congestive complications of the febrile attack, and will require *topical* or even general depletion. Let not the physician, however, dream of treating these local complications as if they were *primary* or *idiopathic*. This was the cause of the frightful mortality among the sick in Algeria, for the first two or three years after our occupation of that country. The surgeons thought that they had to treat *gastro-cephalitis*, and resorted to the use of antiphlogistic remedies, whereas, all the while the disease demanded the exhibition of bark and other tonics. It has been chiefly to the skill and sagacity of M. Maillot, that we are indebted for this important discovery."

We recollect one case of catarrhal fever which has convinced us of the alliance of this disease with intermittent. It was attended with severe

* Op. cit. p. 139.

† Med. Chir. Rev. 42d, 222.

pain over the eyes and in these organs which was of an intermittent character, coming on every morning about 9 o'clock, and attended with high fever. The patient was largely bled and purged without relief, when the use of quinine for twelve hours put a complete stop to the disease.

There is abundant evidence to establish the intimate relation that exists between this fever and one of the forms of dysentery. Dysentery, however, like all other local affections, is of as many species as the essential disease which gives birth to it. Thus the diarrhœa and dysentery which prevailed at the Mill-bank prison in 1822, according to Latham and Roget,* was nothing more than a "*symptom of scurvy*," but we now speak of that form that has a remittent type, and prevails at the same time with this form of fever.

Sydenham and Mosely both believed that dysentery was a fever turned in upon the bowels, and many later writers have adopted the same conclusion. Dr. Rush† often remarked dysentery as a symptom of bilious remittent fever. "I took notice," says he, "in the history of this fever, that it was sometimes accompanied with symptoms of a dysentery. Where this disease appeared, I prescribed lenient purges and opiates; where these failed of success, I gave the bark in the intermissions of the pain in the bowels, and applied blisters to the wrists. The good effect of these remedies led me to conclude that the dysentery was the "*febris introversa*" of Dr. Sydenham. Dr. Parr says, "In fact it is a contagious remittent fever, with erysipelatous inflammation of the mucous coat of the bowels." The most conclusive evidence upon this point, however, is furnished by Dr. Cheyne‡ in his report of the Whitworth Hospital, containing an account of the dysentery that prevailed in Dublin in the year 1818. He says, "It was observable that dysentery frequently occurred at that period of recovery from fever, when there seemed the greatest liability among the convalescents to relapse. Dysentery, whether its connection with fever could be traced or not, often commenced with a rigor and terminated in free perspiration; it was sometimes converted into a fever, while, on the other hand, fever was frequently converted into dysentery, and lastly, during convalescence from dysentery, several persons sustained an attack of fever; in short, these forms of disease were convertible the one into the other, so that the opinion of Sydenham, that dysentery was a '*febris introversa*,' received support from our observations."

Dr. Johnson§ has advanced a similar opinion, and considers dysentery to be a local affection depending upon the fever with which the patient was just attacked. In the "Statistical Reports of the Health of the Navy|| for the years 1830—6 inclusive," in the British service, in speaking of the diseases of the African station, the reporter states, that the most formidable

* Monthly Jour. 2d, 205.

† Op. cit. vol. 1st, p. 130.

‡ Monthly Jour. 1st, 108, and Good's Study of Med. vol. 2d.

§ On Liver.

|| Med. Chir. Rev. 40th, 360.

enemies of the European constitution were the bowel-complaints. "These included diarrhœa, dysentery, enteritis, *all closely allied affections*, one often *running into the other so insidiously* and by *movements so difficult to observe*, that it was impossible to decide the exact limits of each, though there was great difference between their extreme points, diarrhœa being one of the most trivial, and acute dysentery one of the most dangerous affections to which seamen are subject." These local affections had all been preceded by the "African remittent," lately so well described by Drs. McWilliam* and Pritchett, which was so disastrous to the officers and men engaged in the expedition to the Niger, and in which these same sequences are mentioned. In this fever the intermittent was also a "common sequence," which led Dr. McWilliam to believe that "*the same cause acting in different degrees of intensity gave rise to both these forms of the fever.*"

Cholera morbus, when not brought on by acrid or poisonous ingesta, is another affection closely allied if not identical with bilious remittent fever; but not to prolong our remarks, we will conclude what we have to say in regard to these local diseases, by the following quotation from Dr. McCulloch:—"Another analogy in confirmation of the same views is found in the character of the bilious remittent, and very especially in those where the affections of this system, (biliary,) forms a conspicuous part of the disease. Such is notably the usual fever of Walcheren, known in the country by the name of gall disease, and such, I need not say, are the still more noted yellow fevers in many cases. In all such instances, though with various modifications, we may consider the disease *as a fever with cholera*, or a mixture of the two, while as the one or the other may predominate, the character of the disorder or the case varies; or, with the general action on the nervous system generating pure fever, there is a local one on the *liver productive of cholera*, just as occurs with respect to *dysentery*, or as also happens in the much less serious disorders of this great class, where a neuralgia may be accompanied by a perfect and marked intermittent, or where that may be insensible."†

We proceed now to the most difficult part of our subject, which is to point out the relations which exist between the fever which we have been considering and the other forms of essential fevers, and this we will do with as *much brevity* as possible.

We have admitted three distinct species of essential fevers, viz: the intermittent, remittent, or "marsh fever," the synocha, cauma, or inflammatory fever and the typhus, and these are all that I can make out among the admitted essential fevers of authors. The inflammatory fever will come under consideration when treating of the *inflammatory types*. The typhus we will consider with Hildebrand and others, as one among the specific exanthems propagated by a specific poison, and belongs to the *exanthematous types*, where we will also refer the typhoid or dothinenterite of the French.

* Am. Jour. Med. Sci., N. S., vol. 7th, 387.

† Op. cit. p. 119.

These fevers can have no specific connection with one another, being pathologically distinct diseases,—but it remains to inquire whether the intermittent or remittent may not, under peculiar circumstances, assume a form so nearly or completely isotypic as to be confounded with them.

In order to proceed correctly, let us endeavour, first, to find out those features by which fevers may be distinguished, and our first remark here is, that they cannot be certainly distinguished by the type of the paroxysms, as has been attempted by some authors, for it is very certain that the intermittent may pass into the remittent, and this last into the continued without any change in the specific character of the fever. Dr. Cullen* recognized a continued form of intermittents, and points out how it may be distinguished from other continued fevers of a different character. Dr. Good says,† “in many attacks (of fever) we see different individuals *touched by the very same influence*, exhibit all the varieties now alluded to, and intermittent, remittent and *continued* fevers, co-existing in every diversity of violence, commencing with either of these forms, keeping tone to the form with which they commenced, or changing one form for another. Such as remarked by Deveze, was the course of the fever in Philadelphia, in 1793; such, according to M. Berthe, was that of the southern provinces of Spain in 1800, and such was particularly the case in the highly malignant yellow fever of Antigua in 1816, as described by Dr. Musgrave. Such, also, as we have seen, was the character of the fevers of Algeria, as described by M. Maillot.

Again, the specific character of a fever can never be determined by what is known as a putrescent or putrid state of the blood—a state so well described by Schwenk and Hasam, many years ago, and which has received more importance of late by the light which has been thrown upon it by the observations of Magendie, Andral and others.‡ Dr. Cullen§ says, “from the dissolved state of the blood, as it presents itself when drawn out of the veins, or as it appears from the red blood being disposed to be effused and run off by various outlets, and from several other symptoms to be hereafter mentioned, I have no doubt, how much soever it has been disputed by some ingenious men, that a putrescency of the fluids, to a certain degree, does really take place in many cases of fever. This putrescency, however, often attends *intermittent* as well as *continued fevers*, and of *the continued kind*, both the synochus and typhus, and all of them in very different degrees; so that whatever attention it may deserve in practice, *there is no fixing such limits to it* as to admit of establishing a species under the title of “*putrid*.” Dr. Hunter|| says, “the putrid fever, (as it is called,) is, perhaps, no more than the inflammatory, upon a constitution that has a peculiarity of action under that disturbance, and, therefore, it proceeds according to that pecu-

* First Lines, vol. 1st, p. 97.

† Study of Med. vol. 2d, 48.

‡ Vide Magendie sur Le Sang and Andral on Blood in Disease, translated by Meigs and Stillé.

§ Op. cit. p. 130.

|| On the Blood, 1st, 247.

liarity. This is well illustrated in specific diseases, for instance, in the small-pox. The small-pox produces a fever, viz., a disturbed action joined with the specific, and although the action is produced by the same poison in two different persons, yet the one shall be truly inflammatory, the other *the putrid*, the erysipelatous, &c." Andral mentions the same connection of scarlatina and small-pox, and so does Dr. Roupell,* in his "Essay on Typhus," in which he says, "these signs, therefore, may be called *accidental and common to a variety of specific diseases*."

Since, then, this state, as we have said before, is common to most diseases, it cannot be considered a specific feature in fever, and the same may be said of those *petechial eruptions* which appear during the course of many malignant fevers, and which are only symptomatic of that hemorrhagic tendency depending upon this very dissolved or incoagulable state of the blood, and seem to bear the same relation to this peculiar condition of the blood, which bullar eruptions may be supposed to hold to the hydroæmic state of this fluid.†

Upon this condition of the blood, no doubt depend, in a great measure, those adynamic, ataxic and putrid symptoms which, when primary, have given rise to as many different designations of fevers, and when arising during the progress of the attack, to the fever known by the name of synochus—names which really apply to a *certain state of a fever which is not understood*.

These things being so, then, it can readily be perceived how "marsh fever" originating in a system brought into this condition by unwholesome food, ill ventilated apartments, &c., may assume an adynamic and continued form, which would cause it to be confounded with typhus, instances of which can be found in the writings of different authors. Whoever will consider attentively the different forms of typhus described by Armstrong,‡ cannot fail to see, I think, that he has ranked under that name fevers which do not belong to it. Dr. Good§ has his "Epanitus Autumnalis Malignus," which might readily be considered true typhus. The fever described by Dr. Nieuwenhuys,|| at Amsterdam, although no doubt the marsh fever, he has called "typhus remittent." In Geneva, Dr. Lombard¶ has employed bark and quinine with advantage in a form of typhus, which, no doubt, was isopathic with intermittent. M. Bally** describes a typhoid type of fever succeeding intermittents and cured by quinine, evidently showing the connection, and Dr. Mackenzie†† has lately described an epidemic remittent fever which occurred at Glasgow, which was attended by an eruption of

* Med. Chir. Rev. 35th, 97.

† These conditions of the blood I hope to notice more particularly hereafter.

‡ Practical Illustrations of Typhus, by John Armstrong.

§ Op. cit. 2d, 99.

|| See paper above referred to.

¶ Med. Chir. Rev. 35th, 541.

** Am. Jour. Med. Sci., vol. 1st, O. S. 434.

†† Ibid. N. S. 7th, 450.

petechiæ and other malignant typhoidal symptoms. In support of this view, I will introduce the following extract from a paper "on the distinction between typhus fever and dothinenterie," read by Dr. Barlow before the Parisian Medical Society.* "It is to be remarked, that the mesenteric fevers of Rome described by Baglivi, though continuous, are allied to the remittent type; that the morbus mucosus of Roederer and Wagler, which occurred at Gottingen in 1761, and which agrees with the third form of typhoid fever specified by M. Chomel, made a near approach to the hemitriteus or semitertian remittent, and that it was preceded and followed by agues and assumed, during its course, an intermittent character. The bilious pituitous fever of Schroeder also showed a remittent form; and the gastric fever occurring at Vienna betrays the same character. In some parts of Germany, on the contrary, the symptoms which *this fever* presents, have caused it to be referred to the head of typhus, under the name of *abdominal intestinal typhus*."

As intermittent, then, may be connected with that condition of the blood which forms the basis of the scorbutic or hemorrhagic types of disease, so we may suppose it possible it may enter as a complication into almost all the other types, without, however, altering always their character in a therapeutic point of view, for, in such cases, the cure of the intermittent is not a cure of the original disease. Thus, for illustration, phthisis is a specific disease, very different from intermittent fever, yet the hectic fever is of an intermittent character, having a tuberculous or scrofulous origin. The proper treatment of hectic is that of intermittents, but not always of consumption.

The question then comes up, how may fevers be distinguished? Were it possible to ascertain what has been called the proximate cause of disease, the distinction would be easy, but, as Dr. Johnson has well remarked, so far as we yet know, there is no proximate cause to any disease, but every disease seems to consist in a "series of causes and effects." We have then to come to a knowledge of the nature of diseases approximatively, or by considering those circumstances connected with them, which may develop their true character, and I think all the necessary conditions of the problem will be found in *the remote or exciting causes so far as we can know them*, *the epidemic constitution of the season*, or *prevailing habit of diseases*; *the peculiar and specific changes in the blood and other fluids*, the *antagonism and coincidence of certain diseases as lately noticed* by some French physicians, and above all, that feature of diseases which we have been examining, viz., *their mutual convertibility*.

We have a word or two to say in relation to yellow and congestive fevers. We have had no opportunity of observing properly the former disease, but if the observation of Rush, Bancroft, Frank, Good, Craigie and others may

* Ibid. 26th, 461.

be depended on, it is identical with the intermittent and remittent fever, and we refer to these writers for the arguments in support of this view.

The fever known as congestive has assumed a great degree of interest of late from its ravages in some parts of our country, particularly at the west. This fever sometimes occurs among us,* and from my own observation, I am clearly of opinion that it is nothing more than a form of the cold stage of intermittents, and this view seems to be supported by the remark of Dr. Parry, of Indianapolis, and Wharton, of Grand Gulf, Miss.† Dr. Wharton pointedly says, “*there is some analogy between the cold stage of an intermittent and the state of the system in congestion; the difference consisting in the greater and more permanent capillary torpor which exists in congestive fever.*” It evidently, therefore, should not be considered a distinct fever, but properly comes under the head of symptoms of depression or sedation of intermittents.

Liberty County, Geo., July 1st, 1844.

ART. VI.—*Statistics of the Causes of Death in the Philadelphia Hospital, Blockley, during a period of twelve years.* By JOHN PROSSER TABB, M. D., of Gloucester Co., Va.‡

THE statistical mode of investigation, now so generally employed in the study of disease in various aspects, is certainly that most applicable to the subject of our present inquiry. It can, indeed, be in no other way approached than by conclusions drawn with proper discrimination from large bodies of authenticated facts. Such a body of facts has been furnished by the records of the Philadelphia Hospital, Blockley, all of which, embracing a period of twelve years, I have examined, and I believe that they will not only include all the causes of death which have existed there, but those also which are common to this climate;—for, in an establishment, one of the most extensive in the world, where, during this time, upwards of 30,000 cases have been treated, in the immediate vicinity of a populous city, affording a refuge to all its poor, containing a population of its own amounting to 1700, I think it would not be presuming too far to expect one of each class of our fatal diseases. They have been divided as follows :

* In 1842 I saw a case of this fever in a foreigner, in which he discharged from his stomach and bowels before death, a fluid in every way similar to “black vomit.” In 1840, I attended several cases, in one of which, after death, there was a discharge of black fluid blood from the mouth and nose. This was told to me, however, by others.

† See their papers in *Am. Journ. Med. Sciences*, vol. 5th, N. S. 28, and 7th, N. S. 339.

‡ This paper was presented as an inaugural thesis to the faculty of Jefferson Medical College.

- I. Diseases of the Brain and Spinal Marrow.
 II. Diseases of the Respiratory Organs.
 III. Diseases of the Heart.
 IV. Diseases of the Alimentary Canal and Abdominal Viscera.
 V. Diseases of Nutrition.

- VI. Cachexia and diseases of uncertain seat.
 VII. Fevers and Exanthemata.
 VIII. Diseases of Women and Lying-in-room.
 IX. Diseases, Surgical.
 X. Diseases which could not be conveniently included under other heads.

In this classification I have had in view rather the organ attacked than the nature of the affection.

* TABLE I.

Diseases of Brain and Spinal Marrow.	1832.	1833.	1834.	1835.	1836.	1837.	1838.	1839.	1840.	1841.	1842.	1843.	Under 1 year of age.	1 to 5.	5 to 10.	10 to 20.	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 to 80.	80 to 90.	90 to 100.	Unknown.	Male.	Female.	Total.	
Cerebritis,	6	5	6	5	5	10	5	5	4	0	5	9	9	4	3	5	12	7	7	6	9	0	0	0	3	39	26	65	
Meningitis and Arachnitis,	1	3	4	1	1	5	31	18	9	13	14	7	28	9	2	2	22	21	9	4	4	0	0	0	0	62	45	107	
Softening of Brain,	0	0	3	6	4	7	4	1	2	0	0	1	0	0	0	0	2	4	1	4	5	7	4	0	0	18	12	30	
Abscess of Brain,	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	1	
Irritation of Brain,	0	0	0	3	0	0	0	4	0	0	0	0	0	0	0	0	0	3	0	2	2	0	0	0	0	3	5	8	
Hydrocephalus,	4	2	3	4	4	0	1	4	1	7	2	4	15	17	2	0	0	3	1	0	0	0	0	0	0	21	15	36	
Effusion on Brain,	1	0	1	8	4	1	1	0	0	0	0	0	0	0	0	0	3	3	0	5	1	3	2	0	0	13	14	27	
Tumour on Brain,	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	4	1	4	2	2	1	0	0	0	16	5	21	
Congestion,	2	0	2	2	0	1	1	3	4	1	3	2	2	1	0	0	9	21	12	14	17	9	3	1	0	51	35	86	
Apoplexy,	7	1	4	5	17	13	6	5	11	13	4	3	1	1	0	0	9	2	1	1	4	2	0	0	0	9	2	11	
Hemiplegia,	0	0	1	1	0	0	3	0	2	0	0	4	1	0	0	0	1	2	1	1	4	2	0	0	0	3	13	38	
Paralysis,	4	6	1	1	5	1	2	2	3	3	2	8	0	0	0	0	2	3	11	1	9	8	3	1	0	25	13	38	
Mania,	16	5	1	7	8	3	2	1	1	0	3	0	0	0	0	0	1	8	11	9	4	5	4	2	0	3	23	47	
Mania a Potu,	75	43	60	19	24	43	16	13	4	3	5	8	0	0	0	0	1	67	113	74	32	8	2	0	0	16	342	71	313
Inoxication,	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	2	0	2	
Convulsions,	15	3	6	11	1	3	3	2	2	2	1	7	24	10	0	0	4	3	4	0	2	0	1	0	3	35	26	61	
Epilepsy,	3	3	2	4	3	1	1	2	2	2	3	2	0	1	2	4	9	8	4	3	0	5	2	1	0	2	13	20	33
Tetanus,	3	3	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	6	1	0	0	1	0	0	0	6	2	8	
Chorea,	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	
Cataleptic Hysteria,	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Inflammation of Spinal Marrow,	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	
Spinal Disease,	1	2	0	1	0	0	1	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	3	1	4	
Spinal Apoplexy,	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	1	
Softening of Spinal Marrow,	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	2	
Myelitis,	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	
Congussion of Spinal Marrow,	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	2	2	
Neuralgia,	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	1	
Lead Palsy,	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total,	143	76	98	78	80	87	83	56	49	52	41	62	92	43	19	14	146	213	140	78	72	43	16	2	27	590	315	905	

* This, as well as every other table of this paper, begins August 1, 1831, and ends August 1st, 1843. The figures in the first line show the deaths to August 1832, those of the second to August 1833, and so on.

CLASS I.—The diseases of the brain and spinal marrow, (see Table I.) it will be perceived, bear a much larger proportion to the whole number than is generally supposed; thus, the proportion is as 1 to 5·5; whereas, in England, in 1840, it amounted only to 1 to 7·1.

The greater liability of the male sex to diseases of this class is worthy of notice, the proportion, as reported by the Registrar-General of England, being 23·236 to 19·625, and here it is as 1·8 to 1, for which the existing state of society will sufficiently account.

The diminution in the number of cases of *mania à potu* is striking, in the first six years there being two hundred and sixty-four deaths, while in the second half of the series there are but forty-nine. This striking disproportion is probably to be accounted for by the change in habits induced by the progression of temperance. The admissions now are by no means as frequent as formerly, and very rarely advance to the third stage of this disease.

On the authority of Dr. Gerhard, I may state that the treatment in the men's department until the year 1837 had been by opiates, and that the number of deaths to those admitted, had been in the proportion of 1 to 10. He then tried stimulation by alcohol, and we have this result :

	Admitted.	Cured.	Died.
Intoxication,	61	61	0
Delirium Tremens, 1st stage,	87	87	0
“ “ 2d “	73	73	0
“ “ 3d “	2	1	1

“The fatal case died a few hours after his entrance, and had been treated by opium in the city.” But that this stimulant is not required, I give the report of Dr. Dunglison, who has charge of the Women's Asylum for six months of the year. He “used not a drop of alcoholic liquor.” His course “has been entirely eclectic, in many cases expectant,” and in its support we have the following :

	Admitted.	Cured.	Died.
Intoxication,	44	44	0
Delirium Tremens, 1st stage,	55	55	0
“ “ 2d “	19	19	0
“ “ 3d “	10	9	1

“which last died on the morning after admission, and had been treated elsewhere for nearly a week.”

Before concluding this order, I must call attention to the much greater fatality of diseases of this class, during the first year, even though we exclude *mania-à-potu*, and suggest as a cause, the influence of intemperance in their development, even when not carried to such extent as to cause *delirium tremens*.

TABLE II.

Disease of Respiratory Organs.	1832.	1833.	1834.	1835.	1836.	1837.	1838.	1839.	1840.	1841.	1842.	1843.	Under 1 year of age.	1 to 5.	5 to 10.	10 to 20.	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 to 80.	80 to 90.	90 to 100.	Unknown.	Male.	Female.	Total.
Pneumonia,	30	10	14	10	18	30	21	27	21	13	22	19	34	22	4	8	40	45	33	19	17	7	3	0	3	158	77	235
Gangrene of Lung, . . .	1	0	0	0	5	4	6	2	4	0	5	0	0	1	0	1	3	9	7	2	2	1	1	0	0	20	7	27
Abscess of Lung, . . .	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0	0	0	1	2	3
Pneumo-hepatic Abscess, .	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	1
Congestion,	0	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0	2	0	1	0	0	1	0	0	0	4	4	4
Bronchitis,	19	3	8	13	4	0	5	5	6	2	4	4	14	12	0	1	4	8	8	6	7	10	1	1	1	49	24	73
Pleurisy,	2	0	1	1	4	4	2	2	2	1	2	2	3	0	0	5	4	3	3	1	5	1	0	0	0	16	6	22
Apoplexy of Lung, . . .	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	1
Empyema,	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	0	1	1	2
Emphysema,	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	2	0	2
Pneumo-thorax,	0	0	0	0	0	0	0	0	1	3	0	0	0	0	0	0	2	3	0	0	0	0	0	0	0	5	0	5
Hæmoptysis,	0	2	0	0	0	3	1	1	0	0	0	1	0	0	1	0	1	2	3	0	0	1	0	0	0	6	2	8
Pectoral Affection, . .	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2	0	0	0	0	0	0	0	3	0	3
Effusion into Bronchi, .	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	1	0	3	1	4
Asthma,	3	1	2	1	1	1	0	0	0	0	0	2	0	0	0	0	0	1	2	2	1	4	0	1	0	5	6	11
Pertussis,	0	0	0	0	1	1	1	0	0	0	0	0	1	0	1	0	1	0	0	0	0	0	0	0	0	2	1	3
Croup,	2	8	0	4	1	2	1	1	0	0	0	1	12	3	3	0	2	0	0	0	0	0	0	0	0	13	7	20
Laryngitis and Pharyngitis,	0	0	4	3	0	0	1	0	4	0	1	1	0	0	0	0	4	5	1	2	0	1	0	0	1	8	6	14
Spasm of Glottis, . . .	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
Total,	62	25	35	37	34	45	38	39	38	20	34	32	65	38	9	12	65	82	64	33	32	26	5	3	5	299	140	439

CLASS II.—This embraces diseases of the respiratory organs, among which pneumonia holds the most prominent place, exceeding the sum of all the others. From other statistics, I find that it occurs more frequently in April than in any other month, but is more fatal in December and January. Children are its especial victims, one-fourth of the fatal cases occurring under the fifth year; but in this respect the proportion is exceeded by bronchitis, where we find it more than a third. Of this latter disease, March gives the greatest number of deaths, and September but one, which was a case of true *bronchitis senilis*.

For spontaneous bronchial inflammation occurring independent of cold, of which there are about six or eight cases, no special place has been reserved, but they have been classed under the general head of bronchitis.

TABLE III.

Diseases of the Heart.	1832.	1833.	1834.	1835.	1836.	1837.	1838.	1839.	1840.	1841.	1842.	1843.	Under 1 year of age.	1 to 5.	5 to 10.	10 to 20.	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 to 80.	80 to 90.	90 to 100.	Unknown.	Male.	Female.	Total.
Disease of Heart, . . .	1	1	3	8	10	18	10	12	4	5	12	3	0	0	0	1	18	18	11	14	11	10	2	2	0	50	37	87
Hypertrophy,	1	0	0	3	5	1	1	1	5	5	3	0	0	0	1	1	4	5	2	3	3	6	0	0	0	13	12	25
Dilatation,	0	0	1	1	4	2	0	0	0	0	0	0	0	0	0	0	3	0	1	1	0	2	1	0	0	3	5	8
Aneurism of Heart, . . .	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	1
Carditis,	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	20
Pericarditis,	1	3	0	2	4	1	0	0	0	4	3	2	2	2	0	1	4	3	8	0	1	1	0	0	0	14	6	8
Endocarditis,	0	0	0	0	0	0	0	1	2	2	3	0	0	0	0	0	5	1	2	0	0	0	0	0	0	4	4	6
Endopericarditis, . . .	0	0	0	0	0	0	0	1	0	0	3	2	0	0	0	1	2	1	2	0	0	0	0	0	0	6	0	1
Aortitis,	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	12
Aneurism of Aorta,	1	0	1	2	2	1	1	0	2	0	1	1	0	0	0	0	0	5	4	2	0	0	0	0	1	10	2	1
Aneurism on Pulmonary Artery, . .	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	1
Phlebitis,	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	1
Hydrothorax,	6	3	9	2	2	0	4	1	2	0	1	0	0	0	0	0	3	7	6	6	7	0	1	0	0	19	11	30
Total,	10	9	14	19	27	24	16	16	15	17	26	8	2	0	1	4	39	43	36	27	22	19	4	3	1	123	78	201

CLASS III.—I have little to say on heart affections, which are placed in table third, except that I do not see the increase here which has been noticed elsewhere, the first six years showing more deaths than the last; which fact inclines me to doubt the correctness of Mr. Farr's inferences. I think that the increase is rather apparent than real, and may be attributed to the more advanced state of the science of physical exploration, by which diseases of this nature may be more readily detected.

TABLE IV.

Diseases of Alimentary Canal.	1832.	1833.	1834.	1835.	1836.	1837.	1838.	1839.	1840.	1841.	1842.	1843.	Under 1 year of age.	1 to 5.	5 to 10.	10 to 20.	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 to 80.	80 to 90.	90 to 100.	Unknown.	Male.	Female.	Total.
Aphthæ,	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
Ptyalism,	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	2	2
Cancrum Oris, . . .	0	0	1	12	1	1	4	1	2	1	1	0	1	13	7	0	1	1	0	1	0	0	0	0	14	10	24	
Tonsillitis,	1	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	2	0	2
Ulcerated Sore Throat, . . .	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
Gangrenous Sore Throat, . .	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1
Stricture of Esophagus, . . .	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Gastritis,	4	4	2	1	1	0	1	6	4	2	5	3	1	0	0	1	9	7	3	6	3	2	0	0	1	16	17	33
Hæmatemesis,	2	0	1	1	0	0	0	1	0	1	0	0	0	0	0	1	1	2	1	1	0	0	0	0	0	6	0	6
Gastro-enteritis, . . .	3	8	17	9	1	0	5	3	2	0	4	6	8	8	0	2	6	8	5	7	4	5	5	0	0	30	28	58
Enteritis,	0	4	2	8	5	1	2	1	1	0	0	0	7	1	1	0	2	6	3	1	0	0	1	0	2	14	10	24
Chronic Visceral Affection,	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	1	1	2
Diarrhœa,	14	2	7	30	31	31	4	12	16	8	5	2	14	12	2	2	22	27	19	23	16	17	5	2	1	88	74	162
Dysentery,	25	2	13	13	11	23	26	10	30	31	51	42	15	7	4	8	33	47	60	37	22	33	12	0	0	187	94	281
Cholera Morbus, . . .	1	2	0	4	0	0	2	0	1	0	0	0	0	0	0	0	0	1	5	1	1	1	0	0	0	5	5	10
" Infantum,	8	2	6	7	2	8	6	5	4	4	3	2	47	10	0	0	0	0	0	0	0	0	0	0	0	24	33	57
" Asiatica,	5	85	0	8	1	0	0	0	0	0	0	0	0	1	2	6	15	17	9	19	12	11	5	2	0	51	48	99
Ileus,	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	1	0	0	0	0	2	0	2
Colica Pictorum, . . .	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	2	0	2
Intussusception, . . .	0	0	0	0	0	0	0	0	0	0	1	1	1	0	1	0	0	0	0	0	0	0	0	0	0	2	0	2
Worms,	1	0	0	0	0	1	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	2	0	2
Peritonitis,	3	3	2	0	4	4	7	0	6	3	11	7	8	0	0	3	8	14	7	4	2	1	1	0	2	30	20	50
Dropsy,	21	11	7	6	13	9	4	9	10	21	5	9	0	0	2	4	28	28	26	16	13	5	2	0	1	86	39	125
Anasarca,	1	3	2	0	0	0	1	0	2	0	0	0	0	0	0	0	1	1	3	2	0	2	0	0	0	5	4	9
Splenitis,	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	1
Disease of Liver, . . .	0	0	0	0	2	11	3	2	0	0	2	0	0	0	0	0	3	9	6	2	0	0	0	0	0	11	9	20
Hepatitis,	3	2	2	3	0	0	0	2	1	1	0	0	1	1	0	0	4	4	2	1	0	1	0	0	0	8	6	14
Biliary Calculi, . . .	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1
Cirrhosis,	0	0	0	0	0	0	0	2	0	1	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	1	2	3
Icterus,	0	1	0	1	0	0	0	0	2	1	0	1	2	1	0	1	1	0	0	0	0	1	0	0	0	2	4	6
Disease of Urinary Organs, . .	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1
Nephritis,	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	1	0	0	0	0	2	0	0	0	2	1	3
Ulceration of Kidney, . . .	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	2	0	2
Suppuration of Kidney, . . .	0	0	0	0	0	0	0	0	1	1	2	0	0	0	0	0	0	1	1	0	1	0	0	0	1	4	0	4
Calculi of Kidney, . . .	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1
Morbus Brighti, . . .	0	0	0	0	0	1	2	0	2	0	7	1	0	0	0	0	5	2	1	4	0	0	0	0	1	9	4	13
Diabetes,	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	1
Disease of Bladder, . . .	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	1	1	2
Cystitis,	1	0	2	2	0	1	2	0	1	0	1	1	0	0	0	0	1	3	0	2	3	1	1	0	0	9	2	11
Total,	97	133	66	107	75	92	70	61	86	75	102	75	109	56	21	28	144	181	156	130	81	84	33	5	11	622	417	1039

CLASS IV.—The diseases of the alimentary canal and abdominal viscera, (see Table IV,) here occupy a much larger portion of the records of mortality than has been noticed elsewhere. By this table the proportion to the whole number of deaths is as 1 to 5, whereas, we learn from statistics in

England, that there it is as 1 to 8. The difference is attributable, partly to endemic influence, and partly to my observations being exclusively confined to that class of society whose vital powers are depressed by want, fatigue and other concomitants of poverty, and who are, therefore, most subject to affections of this nature. The greater prevalence of dysentery in the autumnal months has been observed everywhere. I find that the proportion, which the last half of the year bears to the first, is as 3 to 1. Diarrhœa is somewhat more equally divided, there the proportion being as 5 to 2.

The cholera appeared in the house July 29th, and disappeared August 27th. Its influence over its class is perceptible, as fewer deaths occur from the other diseases in that year than in any of the series. The fatality the previous year is astonishing, being nearly twice as great as has been observed since. This has been remarked elsewhere also, and leads to the belief that the high inflammatory tendency then manifested exercised some influence over the development of this epidemic.

The deaths in the succeeding year, falling so far short of the usual number, is attributable, I believe, to the purification of the cholera; for by seizing on feeble constitutions it would necessarily occasion a diminution in deaths from other causes.

Bearing in mind the statement made in the introduction, that the classification had been made in relation to the organ affected, it may be thought that anasarca is out of place; but I have included it under this head, from its close connection with abdominal dropsy and its causes.

TABLE V.

Diseases of Nutrition.	1832.	1833.	1834.	1835.	1836.	1837.	1838.	1839.	1840.	1841.	1842.	1843.	Under 1 year of age.	From 1 to 5.	5 to 10.	10 to 20.	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 to 80.	80 to 90.	90 to 100.	Male.	Female.	Total.
Marasmus, . . .	10	12	1	15	7	7	13	16	4	9	12	15	71	22	3	1	4	2	3	6	6	1	2	0	67	54	121
Debility,	9	0	0	0	0	1	2	3	0	0	0	3	5	0	0	0	2	2	3	1	5	0	0	0	10	8	18
Total, . .	19	12	1	15	7	8	15	19	4	9	12	18	76	22	3	1	6	4	6	7	11	1	2	0	77	62	139

CLASS V.—Inanition and abstinence are included under the first head of the diseases of nutrition, (see Table V.); and debility comprehends asthenia and exhaustion.

Children suffer particularly from these diseases during the warm weather, one-half of the cases occurring in the three months of summer. Bad constitution of the parent, and an impure atmosphere increase the liability to these diseases, as does also most especially the loss of the mother's milk; for I know that an epidemic of puerperal fever, which prevailed last winter, indirectly proved fatal to many children who fell under my care; and I have not seen one death from faulty nutrition where the natural food was obtained;—a fact to be well considered before advising a mother to wean her infant.

TABLE VI.

Cachexia and diseases of uncertain seat.	Under 1 year of age.												Total.
	1832.	1833.	1834.	1835.	1836.	1837.	1838.	1839.	1840.	1841.	1842.	1843.	
Rheumatism,	2	0	0	1	0	0	0	0	0	0	0	0	1
Erysipelas,	2	3	4	1	1	1	0	0	0	0	0	0	30
Scrophula,	2	0	3	4	1	1	6	2	2	7	4	12	17
Tabes Mesenterica,	0	0	0	0	0	0	1	3	3	3	6	6	13
Phthisis,	108	106	91	116	95	96	113	109	122	123	120	113	37
Anemia,	0	0	0	0	1	4	0	0	0	0	0	0	24
Purpura Hemorrhagica,	0	0	1	0	0	0	0	0	0	0	0	0	1
Hemorrhage,	0	0	1	0	0	0	0	0	1	1	0	0	3
Splenic Cachexia,	0	0	0	0	0	0	0	0	0	0	1	0	3
Fungus Hematodes,	0	0	0	0	0	0	0	0	0	1	0	0	1
" " of Liver,	0	0	0	0	0	0	1	0	0	1	1	0	5
Cancer,	0	1	0	0	0	0	0	0	0	0	0	0	1
of Eye,	1	0	0	0	0	0	0	0	0	0	0	0	2
of Heart,	0	1	0	0	0	0	0	0	0	0	0	0	1
of Neck,	0	0	0	0	0	0	0	0	0	0	0	0	1
of Mamme,	0	0	1	0	0	0	0	1	0	0	0	0	2
of Stomach,	0	0	1	0	0	0	0	0	0	2	0	0	3
of Intestines,	0	0	0	0	1	0	0	0	0	1	3	1	6
of Rectum,	0	0	0	0	0	0	0	0	0	0	0	0	0
of Liver,	0	0	0	0	0	0	1	0	0	0	0	0	1
of Liver and Lungs,	0	0	0	0	0	0	0	0	0	1	0	0	1
of Vagina,	0	0	0	0	1	0	0	0	0	0	0	0	1
of Uterus,	1	0	1	0	0	2	4	1	0	0	0	0	10
of Penis,	0	0	0	0	0	0	0	0	1	1	0	0	3
Cancerous Tumour of Abdomen,	0	0	0	0	0	0	0	0	0	0	0	0	0
Osteo-Sarcoma,	1	0	0	0	0	0	0	0	0	0	1	0	1
Total,	117	112	102	134	100	106	131	117	132	148	136	141	1406

CLASS VI.—Cachexiæ and diseases of uncertain seat.

Phthisis was not included under the diseases of the respiratory organs, because I do not think it a mere local affection, but that "its essential characters depend much more upon its diffusion through the whole body." Here it swells the catalogue, proceeding with a steadiness which is surprising; change of temperature and seasons offers little barrier to its fatality; the same number die in July as in December, in April as in August, and it is only in the two first months of autumn that any appreciable diminution is observed. All ages are liable to its attack; but not equally so, and this table shows that its development is much more common at that period when the growth of the human body is completed, and a subsidence of the nutri-

ent vessels takes place, for one-third of the whole number die between the ages of twenty and thirty; and this is farther corroborated by statistics elsewhere. Females are thought to be the special victims of pulmonary decay; that this is so in England, I doubt not: but it should not hold good in this country, where women are not subject to so much exposure, and where the labour of the husband is generally sufficient to afford comfortable subsistence to his family.

TABLE VII.

Fevers and exanthemata.	1832.	1833.	1834.	1835.	1836.	1837.	1838.	1839.	1840.	1841.	1842.	1843.	Under 1 year of age.	1 to 5.	5 to 10.	10 to 20	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 to 80.	80 to 90.	90 to 100.	Unknown	Male.	Female.	Total.
Intermittent Fever, . . .	2	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	0	0	1	0	0	0	3	0	3
Malignant Intermitent, . . .	0	0	0	0	0	3	0	0	0	2	0	0	0	0	0	0	0	1	1	2	1	0	0	0	0	5	0	5
Remittent, . . .	8	2	0	1	4	0	0	0	1	1	0	0	0	0	1	0	8	4	1	2	0	0	1	0	0	12	5	17
Continued, . . .	7	2	0	0	0	0	0	0	0	2	1	0	0	1	0	1	2	4	0	0	2	1	0	0	1	5	7	12
Typhoid, . . .	13	20	7	2	4	4	3	2	3	1	7	7	1	1	0	5	32	14	5	3	5	1	1	0	5	45	28	73
Typhus, . . .	54	14	4	4	60	15	19	1	8	0	9	3	0	1	1	6	56	43	39	21	14	5	3	0	2	112	79	191
Hectic, . . .	4	2	0	0	0	1	0	0	0	0	0	0	0	0	0	1	4	2	0	0	0	0	0	0	0	5	2	7
Ataxic, . . .	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	2	2
Miliary, . . .	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	1
Gastric, . . .	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1
Rubeola, . . .	4	0	0	15	0	0	8	0	0	0	0	0	4	18	5	0	0	0	0	0	0	0	0	0	0	15	12	27
Scarlatina, . . .	2	0	0	0	0	0	1	1	1	0	1	0	2	2	2	0	0	0	0	0	0	0	0	0	0	4	2	6
Variola, . . .	0	0	0	3	0	0	0	0	0	0	1	1	0	1	0	0	1	2	1	0	0	0	0	0	0	3	2	5
Varicella, . . .	1	0	0	0	0	0	0	1	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2
Total,	95	41	13	25	68	23	31	5	13	4	21	13	9	24	9	13	104	71	48	30	23	8	5	0	8	211	141	352

CLASS VII.—The prevalence of this class varies everywhere more than any other. With every year and situation a marked change is observed; thus, though there were only 729 cases in Glasgow during 1830, there were 5387 in 1837, and while in that place, the average during a space of six years, was 1842; in Manchester, with an excess of population of 28,000, it only amounted to 497. What the prevalence has been here, I have no means of ascertaining. I treat of the mortality and find that this varies astonishingly also:—thus, in Glasgow, for different years, it bore the proportion to the whole number of deaths of 1 to 15·6, to 10 to 4·7 annually; and here, during the first year, it is as high as 1 to 6·4, while taking the average of the last six years, it is reduced as low as 1 to 27. To the whole number of admissions during one year, the proportion of deaths from this cause was as 1 to 27, while the average for six years is as 1 to 149·4. There having been 14,495 admissions and but 97 deaths. The influence of seasons over typhus I am able to give from other tables, by which I see that the spring months have a decided preponderance, and that $\frac{2}{3}$ ths of the cases occur during the first half of the year. That the number of deaths from rubeola should exceed that from scarlatina does not surprise me, inasmuch as many statistical tables show the same, but I allude to this fact, since it militates so much against the general opinion on the subject. I cannot dismiss this class without saying, that the belief that epidemics of fever do not add to

the general mortality, is ill founded, for in those years in which they are most prevalent, I find that deaths from other causes are not diminished, but actually increased; that is, so far as my observation has extended.

TABLE VIII.

Diseases of Women and Lying-in Room.	1832.	1833.	1834.	1835.	1836.	1837.	1838.	1839.	1840.	1841.	1842.	1843.	Under 1 year of age.	1 to 5.	5 to 10.	10 to 20.	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 to 80.	80 to 90.	90 to 100.	Unknown.	Male.	Female.	Total.
Puerperal Peritonitis,	4	0	2	0	0	1	3	1	3	0	8	8	0	0	0	1	21	8	0	0	0	0	0	9	0	0	30	30
Hysteritis,	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
Child-Bed,	1	0	0	0	0	1	0	1	1	0	0	0	0	0	0	1	2	1	0	0	0	0	0	0	0	0	4	4
Premature Labour,	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	1	2	0	0	0	0	0	0	0	0	3	3
Hemorrhage from Retained Placenta,	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1
Hemorrhage from Uterus,	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1
Puerperal Convulsions,	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1
Disease of Ovary,	0	0	0	0	2	0	0	0	1	0	0	0	0	0	0	0	1	1	0	0	0	1	0	0	0	0	3	3
Ovarian Tumour,	0	0	0	0	0	0	0	2	0	0	1	0	0	0	0	0	0	2	0	1	0	0	0	0	0	0	3	3
Ovarian Dropsy,	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	2	2
Premature Birth,	0	0	0	1	0	0	0	0	0	0	2	1	4	0	0	0	0	0	0	0	0	0	0	0	0	1	3	4
Asphyxia,	0	0	0	0	0	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2
Overlaid by Mother,	0	1	0	0	1	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2
Total,	6	2	2	3	3	2	3	4	7	0	12	13	8	0	0	2	28	15	1	1	0	1	0	1	1	4	53	57

CLASS VIII.—The deaths from child-birth form a strikingly insignificant portion, when we consider that this includes nearly a thousand labours, and suggests a compliment to the obstetricians, under whose superintendence these wards have been placed, for I believe, in no hospital in the world, can a more flattering proof of success be given, particularly too, when it is recollected, that the cases have been entirely composed of the very dregs of society, all more or less shattered in constitution, and among whom one would be most likely to have profuse hemorrhage from insufficiency of uterine action.

Puerperal peritonitis occupies the most prominent place in this table.

Three epidemics have prevailed since my acquaintance with the house. In character one was mild, and two very violent, usually proving fatal on the third day; which will account for the proportion of deaths to those attacked being as 2 to 3. No connection can be established between this fever and erysipelas, farther than would appear from their prevalence at the same time, on two different occasions: but in a large hospital of this kind, there will always be found several cases of erysipelatory inflammation, and when the puerperal fever occurs, it may be looked on as a coincidence, not a consequence, for they certainly do not always accompany each other; nor, in the two instances mentioned, has the cessation of the one exercised any appreciable influence over the other epidemic.

TABLE IX.

Surgical Diseases.	1832.	1833.	1834.	1835.	1836.	1837.	1838.	1839.	1840.	1841.	1842.	1843.	Under 1 year of age.	1 to 5.	5 to 10.	10 to 20.	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 to 80.	80 to 90.	90 to 100.	Unknown.	Male.	Female.	Total.	
Gangrene,	4	3		4	4	2	10	3	2	1	3		2	1		3	1	5	5	5	6	4	4			23	14	36	
“ of Thigh,			1																							1	1	1	
“ of Labia,					1										1						1					1	1	1	
“ of Mammaræ,							1																			1	1	1	
“ of Rectum,						1															1					2	2	2	
“ of Scrotum,						1																				1	1	1	
“ of Ear,											1		1	1												1	1	1	
“ of Arm,											1										1					1	1	1	
Hospital Gangrene,												2					1	1								1	1	2	
Excessive Sloughs,					2											1				1						1	2	2	
Anthrax,									1																	1	2	1	
Abscess,	3	2		1						1	1	5	1				3	2	3	1	2					10	2	12	
Phlegmonous Abscess,			1														1									1	1	1	
Internal “											2										2					1	1	2	
Iliac “											1						1										1	1	1
Femoral “							1																				1	1	1
Psoas “	1	1				1	2	2	1	1						3	2	2	1	1						4	5	9	
Lumbar “	1	2	3														3	2	2	1	1					4	2	6	
Cold Abscess of Thigh,										1										1							1	1	1
Abscess in Ear,						1																				1	1	1	
“ of Knee Joint,						1										1										1	1	1	
Suppuration of Scrotum,				1															1							1	1	1	
Caries,	1																			1						1	1	1	
Caries of Petrous Bone,																										1	1	1	
Caries of Bones at Base of Brain,						1																					1	1	1
Caries of Superior Maxillary,			1																							1	1	1	
Caries of Spine,		1	1						2		1					3	1	1								3	2	5	
Caries of Lumbar Vertebrae,						1											1									1	1	1	
“ of Sternum,	1											1						2								2	1	2	
“ of Pubes,					1													1								1	1	1	
“ of Knee Joint,	2																			1						1	2	2	
“ of Tarsus,						1											1									1	1	1	
Coxalgia,					2	1	1	1				1		2	2	1	1									4	2	6	
Necrosis of Femur,					1													1								1	1	1	
Ulcer,	6	2							1			3	1					2	2	1	6					6	6	12	
Ulceration of Mammaræ,			1													1										1	1	1	
Burn,	2	3	3	3	1			2			2				1	3	1	4	3	2						7	9	16	
Accidents,	2																									16	1	17	
Gunshot Wounds,	1																									1	1	1	
Wound,		1															1									1	1	1	
Wound of Lung,																										1	1	1	
Fracture of Neck of Femur,		1																		1						1	1	1	
“ of Femur,			1		1															1	1					2	2	2	
“ of Spine,								1										1									1	1	1
Strangulated Hernia,	1	1									1	1	1							2						3	1	4	
Infiltration of urine in Perineo,				2							1							1	1		1					3	3	3	
Retention of Urine,									1													1				1	1	1	
Stricture of Urethra,					1		1													1	1					2	2	2	
Calculi in Bladder,						1					1					1				1						2	2	2	
Vesico-Vaginal Fistula,											2						2										2	2	2
Fistula in Ani,											2								1	1						2	2	2	
Polypus Nasi,																	1									1	1	1	
Ozena,			1																							1	1	1	
Lupus,						1																					1	1	1
Cutaneous Eruption,	2																									1	1	2	
Rupee,						2	1	1					1	1	3	1										3	1	4	
Traumatic Erysipelas,								1					1				1									1	1	1	
Spina Bifida,			1																							1	1	1	
Tumour of Neck,							1																			1	1	1	
Femoral Aneurism,																											1	1	1
Fungus Articul,												1							1	1						1	1	1	
Syphilis,	5	4	5	2	1	1	2	8	5	5	2	2	6	1	1	4	14	15	1							14	28	42	
Operation,																		1									1	1	1
“ for Cancer,			1																								1	1	1
Total.	31	22	20	15	21	22	27	19	19	10	15	24	15	12	6	22	40	45	30	19	30	9	6	0	1	141	94	235	

CLASS IX.—The comparative remoteness of the Blockley Hospital from the city is the reason why this table presents so small a proportion to the whole. It has been included, however, such as it is, merely that the causes of the whole number of deaths might be given. Endemic influence has no bearing on their development, and as it has been my object to treat particularly of diseases incident to climate and situation, this order will be dismissed without farther comment.

TABLE X.

Diseases not other- wise arranged.	1832.	1833.	1834.	1835.	1836.	1837.	1838.	1839.	1840.	1841.	1842.	1843.	Under 1 year of age.	From 1 to 5.	5 to 10.	10 to 20.	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 to 80.	80 to 90.	90 to 100.	Unknown.	Male.	Female.	Total.
Mumps, . . .	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	
Constitutional Irritation, . .	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	1
Effects of Opium, Exposure to Cold, Suicide, . . .	1	1	0	0	0	0	0	0	2	0	1	0	1	0	0	0	0	1	1	0	1	2	0	0	0	4	1	5
Excessive Stimu- lation, . . .	1	0	0	0	2	0	1	0	2	1	0	0	0	0	0	0	1	2	1	0	1	0	0	0	2	2	5	7
Old Age, . . .	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1
Unknown, . . .	20	19	10	25	5	5	9	16	5	6	22	23	8	1	0	0	0	0	0	0	9	51	59	38	8	61	104	165
	6	9	0	0	0	0	13	3	1	4	2	3	8	1	0	5	6	5	7	2	3	0	0	4	23	18	41	
Total, . . .	31	29	10	25	7	5	23	21	8	12	25	27	9	2	0	0	8	9	7	7	13	57	59	38	14	93	130	223

CLASS X.—Of the diseases comprised under this head, because they could not conveniently be arranged otherwise, old age alone suggests a remark, and I add my mite to the existing testimony in favour of the greater longevity of woman. The proportion to man, of those who die from this cause in England, is as three to two, and the same is observed here. Of fourteen, who lived beyond one hundred, but five were men; and the only two who exceeded an hundred and ten were women, one of whom reached her hundred and nineteenth year, to fall a victim of cholera in 1832. The superior value of female life, thus proved, is owing, I think with Dr. Gregory, not to any difference in the original construction, but to the smaller demand made on her vital powers during the middle period of life, the more equable temperament of her mind, and, thirdly, to the less degree of toil required at her hands in a highly civilized country.

An examination of each class has now been made, and as few remarks offered as were consistent with the nature of this paper. Each table gives the number of deaths from each disease, with the age and sex of the individual. As a whole, it embraces the causes of all the deaths which have there occurred. The total is 5056. From August 1st, 1831, to August, 1832, the number is 611, and for each succeeding year as follows—461, 361, 448, 422, 404, 437, 357, 371, 347, 424, 413. Of the whole number, 880 have been under twenty years of age, 2041 between twenty and forty, and 1862 between forty and eighty.

The proportion which each class bears to the whole can easily be seen ; thus in every thousand deaths,

There are of the 1st Class, Diseases of Brain and Spinal Marrow,	-	-	-	177
“ “ 2d “ “ “ Respiratory Organs,	-	-	-	85
“ “ 3d “ “ “ Heart,	-	-	-	40
“ “ 4th “ “ “ Alimentary Canal and Abdominal Viscera,	-	-	-	206
“ “ 5th “ “ “ Nutrition,	-	-	-	28
“ “ 6th “ “ Fevers and Exanthemata,	-	-	-	290
“ “ 7th “ “ Diseases of General Location,	-	-	-	70
“ “ 8th “ “ “ Surgical nature,	-	-	-	12
“ “ 9th “ “ “ Women and Lying-in Room,	-	-	-	47
“ “ 10th “ “ “ not included above,	-	-	-	45
				<hr/> 1000

The object of this paper is now accomplished, but I cannot close it without deploring the great lack of statistical information throughout this country. Who would ever imagine that a death-book afforded the only records of a large hospital, yet such is the fact; and it is only of late that any diagnosis of disease has been registered on the patient's admission. Had proper attention been paid to this point, what a vast fund of information might have been accumulated, and then I should have been able to give, of each disease, the relation between the mortality and frequency of occurrence.—The means of doing so are, unfortunately, not afforded me; every record of the hospital has been examined, and the result here given. Of their accuracy, I need say nothing; this is ensured by the advantages which the institution enjoys in the services of many of our first medical men, and the facilities of post-mortem examinations.

REVIEWS.

ART. VII.—*A Treatise on Operative Surgery; comprising a Description of the various Processes of the Art, including all the new Operations; exhibiting the state of Surgical Science in its present advanced condition; with eighty Plates, containing four hundred and eighty-six separate illustrations.* By JOSEPH PANCOAST, M. D., Professor of General, Descriptive and Surgical Anatomy, &c. &c. Philadelphia: Carey & Hart, 1844. 4to. pp. 380.

THE English language has but little to boast of in systematic surgical compilations; and even less, in systems of operative surgery proper. Our surgical authorities appear to have been mainly interested in establishing correct principles in anatomy and pathology, and to have rarely thought of systematizing. We have admirable compends, invaluable treatises on many of the specialities, with innumerable memoirs, essays and observations on detached subjects in every department of surgery, either published apart, in our periodical literature, or in the transactions of our societies; yet up to the present day we can boast of nothing to compare in systematic surgery, with the masterly productions of Heister, or of Boyer; and in operative surgery, with the long since antiquated Demonstrations of Dionis, the *Médecine Opératoire* of Sabatier, the erudite Treatise of Velpeau, the *Manual of Malgaigne*, or the magnificently illustrated work of Bourgery.

The surgical authorities of our own country are still less disposed to systematic performances than the surgeons of Great Britain. We have, it is true, a few very useful compends, prepared by teachers as text-books for their students; but in operative surgery, prior to the appearance of the work before us, we can refer to nothing from the pen of an American. Our surgical teachers after laying down general rules for operating, have been disposed to leave all the minute details to the common sense of the practitioner. Practice, and not the statute, would appear with us to be the common law by which all such matters are to be regulated. This, perhaps, may, after all, be considered good policy in educating the youth of America, who have long had the reputation of learning to whittle before they learn to speak, and of understanding the use of edged tools instinctively. Science might confuse in attempting to teach them what they already know, or at any rate, appear to know, sufficiently well without it.

So far as we now recollect, the works on operative surgery by Sharp, Charles Bell and Averill, are the only ones entirely devoted to this department of the art, that had appeared in England prior to the recent publications of Liston and of Fergusson.

Sharp's treatise, the first of these in order of time, founded on a fair share of personal experience, is mainly devoted to the major operations; and of these it treats with almost Celsian brevity. A pupil of the celebrated Cheselden, he dwells with marked interest on the improvements introduced by his master. He has but little favour for foreign authorities,

particularly the French. "It is true," says he, "we have a few translations from the writings of foreigners; but besides that they are unacquainted with these improvements, their manner of describing an operation is so very minute, and, in general, so little pleasing, that could nothing new be added, or nothing false exploded, the possibility of only doing it more concisely and agreeably, would be a reasonable inducement for the attempt." Well for some of our recent writers, and better for their readers, had they, in preparing their works for publication, pondered on the allusion conveyed in the latter clause of this passage.

The operative surgery of Charles Bell, at its first appearance, must have been founded on a rather small stock of surgical experience, such as is acquired, for the most part, in the dissecting room, and by reflecting on the practice of others. It has the merit of pointing out, in a forcible manner, the intimate relation between correct principles in surgery and an accurate knowledge of anatomy. It is adorned with numerous spirited sketches from the pencil of the author himself, which will compare advantageously, so far as they go, with almost any thing of the sort that has since appeared. Surgical science, however, has long since shot far ahead of this performance, which, but for the reputation of its author in other departments, might ere this have been forgotten.

Of Mr. Averill's little volume we have only to say that its claims are very modest. It was originally designed only as a manual for assisting the student in his manipulations on the dead body.

Passing by these earlier essays, we come to the "Practical Surgery, with one hundred and twenty engravings in wood," by Mr. Liston. The merits of this highly practical performance are sufficiently known; and too highly appreciated by the profession to be called in question here. Its author has thought and acted too much for himself, too much on the responsibility of his own cool and collected judgment, to be the mere compiler of other people's labour. His profound knowledge of the principles and bearing of his art, his powerful and rapid hand, his delicate and accomplished touch, have impressed his name indelibly on the records of surgery. His treatise is invaluable as the history of his own practice. But, after all, it is only the practice of Mr. Liston.

Mr. Fergusson, with some of the defects of the former, has many of his sterling qualities;—correct in his anatomy, spirited in his descriptions, skilful in his operations; a practical, but not a finished teacher. In his recent "System of Practical Surgery," Mr. Fergusson, like Charles Bell, has had an eye more directly towards the student and the dissecting room. The practitioner will find in it many useful suggestions, and an excellent but not a complete system of the operative surgery of the day.

With this hasty survey of what had already been effected in the department of operative surgery, by systematic writers in England, we are somewhat prepared to give an estimate of the ground yet unoccupied, and which Dr. Pancoast has attempted to appropriate. Prior to the appearance of the work before us, then, we were without a classical treatise on operative surgery, comprising a description of all, or even most of the processes of the art. Such treatises, however, existed in other languages; and Dr. P., by the aid of these and by other means, has undertaken to supply this marked deficiency. The title of his work, "A Treatise on Operative Surgery, comprising a Description of the various Processes of the Art, including all the New Operations, exhibiting the state of Surgical Science

in its present advanced condition; with eighty Plates," &c., is sufficiently ambitious.

It was formerly the fashion, in publishing compilations, to make some allusion, in the title-page, to selections or quotations from the best authors; a modest practice this, that of late is getting into disuse. Thus, some thirty years or more ago, was published in Philadelphia, in one octavo volume, a useful digest of the four volumes of Benjamin Bell, under the title of "A System of Surgery, extracted from the works of B. Bell, of Edinburgh, by N. B. Waters, M. D." So also about the same era appeared in New York, in two octavo volumes, a similar digest of the eleven volumes of Baron Boyer, under the unassuming title of "A Treatise on Surgical Diseases, and the Operations suited to them, by Baron Boyer; translated from the French, by Alexander H. Stevens, M. D." This last very useful digest, notwithstanding its honest title-page, succeeded, somehow or other, in holding for many years a favourable place in the estimation of the profession. But, as we have already said, this primitive mode of announcing new books is gradually growing obsolete. The present is an age of improvement, as well as of book-making; and every teacher and professor must have, for the benefit of his pupils, a text-book of his own, with his own name in front of it, no matter whence his materials are derived. Nay, so numerous are the advantages attending the present easy modes of book-making, that the business is no longer confined to professors.

It has been intimated, and such probably is the fact, that this modern improvement is a discovery of publishers, who appear to have found out that useful scientific works are no longer saleable unless announced as the production of some one else than their real authors. We are told by an ancient legend that Faustus, in order to acquire the art of multiplying books by magic, was obliged to sell himself to Satan. So it is with such modern book-makers as sell themselves, with not even penury as an apology, to the publishers. In giving their name to works to which they have no other claim than as translators, abbreviators, annotators or remodellers, they may, like Faustus, do good in their day and generation; but, then, they must not be disappointed if obliged, in reputation, to share the fate of Dr. Faustus in the end.

But Professor Pancoast does not claim for the work before us the character of an original production. The necessity, he observes, of thoroughly illustrating the operations of surgery, has long been felt. Almost every modern surgeon of distinction, and especially Camper, Scarpa, Cooper, Hesselbach, Bell and Dupuytren, have contributed to the attainment of this end.

"The attempt to collect the newest and completest modes of illustration into a continuous whole, has been made but in two instances,—by M. Froriep, of Berlin, who has issued them in numbers, without any other regard to order than the time of their appearance; and by M. Bourgery, of Paris. The voluminous and expensive character of these works, and especially of the latter, which is as yet but little more than half completed, as well as their being clothed in a foreign language, renders them, in a great degree, inaccessible to the American surgeon. With these admirable treatises before him as a guide, and having at hand the greater portion of the surgical works which have recently appeared in various languages, and with the advantage which nine years continuous service in one of the largest hospitals of North America has given him, not only in comparing, to a certain extent, the value of the different methods, but in enabling him to obtain a large number of accurate drawings of operations which have been done

by his own hand, the author has endeavoured to furnish a work that shall represent, so far as its limits will allow, the operative surgery of the day."

The work, then, according to this announcement, and as every work pretending to set forth the present improvements in operative surgery should be, is substantially a compilation; but, as we are led to infer by the foregoing passage from the advertisement, with characteristic features of its own of sufficient merit to commend it to our most respectful consideration.

Against judicious compilations we have nothing to advance. We cannot do without them. The enlightened and laborious compiler, provided his research has been extensive, and mostly among original authorities, and his collections thorough and judicious, deserves, and usually acquires quite as much credit as the inventive and original writers from whom his materials are directly drawn. But then, every book detailing the opinions or procedures of original writers or operators is not in this sense a compilation. There is such a thing as compiling from compilers, and of making a very small modicum of research pass for infinitely more than it costs. Paré, although a benefactor to his race, by his admirable innovations, was a skilful and laborious compiler. Heister was a compiler who has had but few, even up to the present day, to compete with him. Mr. Samuel Cooper is a compiler, and so is M. Velpeau. But we have some few scruples of conscience against placing Professor Pancoast in such company. For, notwithstanding the allusion to numerous sources of information, which we have already quoted from his advertisement, his work affords no evidence that his research has been at all extensive. We do not wish to infer that his reading has been limited, that he may not have consulted numerous authorities, or that he has contributed nothing valuable of his own;—but we cannot resist the conviction that the great mass of his text, and at least three-fourths of his lithographic illustrations, have been drawn from a single source. Some of those who peruse the work may imagine they see the ghost of Velpeau in every page; others at every turn detect the hand of Malgaigne. For ourselves we see but little else in this production than a miniature reflection of *Bourguery*. We have not, it is true, compared it word for word with the voluminous production of this French author; not having the work of the latter continually at hand for so doing. But we have compared, at random, different sections of the two performances; and found the resemblance so very close, that we are forced to believe the one has not only served as a model, but has also supplied the mass of material for the other.

It is easy to reconcile these different resemblances. M. Velpeau, distinguished as much for his professional erudition as for his practical ability, has presented to the profession a system of operative surgery so learned as to constitute a store-house for those who have since followed him. M. Malgaigne has adopted his plan, condensed his materials and added some judicious observations of his own, especially in his sections devoted to operative anatomy, and in his appreciation of the different operative procedures which he describes as applicable to a given object. M. *Bourguery*, with the writings of both these authors before him, has had little else to do than to follow in their train, improving somewhat upon their plan, by the addition of some valuable materials on the history of particular classes of operations, and what is still more characteristic of himself, by

his system of magnificent lithographic illustrations. There is, then, a most striking resemblance common to the writings of these three authors; original in Velpeau, reflected in Malgaigne, modified in Bourguery; and, finally, communicated, indirectly, to the work under consideration.

How far Professor Pancoast has drawn from the work of Froriep, we are unable to determine, never having had an opportunity of consulting that German publication. But certain it is, unless M. Bourguery has drawn from the same source, that Professor P. can be but little indebted to him. He appears to have followed directly in the wake of Bourguery, condensing, modifying and re-arranging his text, re-assorting and appropriating the best of his lithographic illustrations, incorporating occasional passages from Fergusson, and other writers of England and America, and some original facts and observations of his own; and thus, with very little labour further than should appertain to him as translator, abbreviator and commentator, to have prepared a book, which, as we believe, however, must prove a useful one to the surgical student. Useful, because it contains much valuable matter nowhere else to be found in a collective form, as yet, at least, in the English language.

We must allude to another passage in the advertising page, before proceeding further. "It has not," observes Professor P. "been possible to enter into a discussion of the claims of different surgeons to particular processes, or to detail in full the therapeutical management of surgical affections, which would have expanded the work to an immoderate size."

Other difficulties than increase in the size of the volume may be suspected to have much to do in suppressing the claims of different surgeons to particular procedures. M. Velpeau, (and it is one of his main defects,) has himself given few or no references, in the body of his book, to the various authors from whom he has had occasion to draw his descriptions; and those who have either directly or indirectly copied him, have, of course, been obliged to follow his example. We hold it hardly sufficient to make a general acknowledgment in an advertisement, or preface, of indebtedness to a few distinguished names. Those who have done least have now and then done best, and hence the necessity of noticing them, and of acknowledging their claims more pointedly than those of the great masters of the art, whose names are familiar to all, and whose claims to originality are consequently in no great danger of suffering, even if omitted altogether by systematic writers. Besides, a compiler, in this respect, should consult the convenience of his readers, who are often in need of referring to original authorities for circumstantial details. This need we have many times experienced; and have more than once felt it in our perusal of the present work. The why, when and where of an operation, are often of as much interest as the name of its projector, who may have been an ancient or a modern, a German, Hindoo or Tennessean, for all that we can ascertain. The French writers, as well as Professor Pancoast, in this respect, would have conferred benefit on their readers, by imitating the example of Chelius.

But several complaints have reached us of want of due acknowledgment on the part of Professor P., towards the surgeons of his own country. Seeing the sources from which his work has been mostly prepared, his want of effort to supply inadvertent omissions on the part of the French authors, and the apparent haste with which the work has been presented

to the public, many of these complaints may be readily overlooked, others we may notice as we proceed.

Probably the most striking feature of the work is its attempt to furnish a thorough course of lithographic illustrations of the operations of surgery. The execution of these plates is highly creditable to the artists as well as to the publishers, who must have incurred in preparing them no inconsiderable expense. They add greatly to the beauty and value of the book, and will be found useful in conveying lively and accurate impressions of the procedures which they are intended to illustrate. Some of them would, at first view, appear to be unnecessary, except to complete a series; the subjects which they are designed to illustrate being sufficiently clear without them. A few of these less necessary plates, as it appears to us, might have been advantageously replaced by others which Professor P. has not thought fit to have copied from Bourguery. We refer to those in which M. B. has delineated most of the modern surgical instruments. Some of the plates, again, are, perhaps, objectionable as leading the student to infer that parts almost inaccessible on the living body, may be easily approached; thereby holding out inducements to undertake operations for which comparatively few are prepared, and which none should attempt, except after the most cautious examination of the recent subject. These objections, however, apply to the original designs, and not exclusively to the present transcripts. For, on the whole, the selection with which we are here furnished, is judicious.

The body of the work is divided into four parts:—First, Elementary and Minor Operations; Second, General Operations in reference to particular tissues; Third, Special Operations upon complex organs in particular parts of the body; to which is added a fourth part, on the sartorial surgery of the day, Plastic and Subcutaneous Operations.

The *First Part*, or that on elementary and minor operations, occupying twenty-seven pages of letter press, and illustrated with seven plates, is subdivided into eleven sections. In these we have a succinct, but sufficiently full description of the division of parts by the bistoury and scissors, of the division of parts by ligature, of phlebotomy or blood-letting in general, of arteriotomy, of cauterization, potential and actual, of reunion by suture, of setons, of issues, of moxas, of acupuncture, and of the means of preventing and arresting hemorrhage.

Part Second, or that devoted to general operations, occupying one hundred and forty-three pages, and illustrated with thirty-seven plates, is subdivided into four sections. Of these the first treats of operations upon the veins; the second, of operations upon the arteries; the third, of operations for diseases of the bones and joints; and the fourth of amputations.

Part Third, or special operations, occupying one hundred and sixty-four pages of text, and illustrated with twenty-seven plates, is subdivided into nine sections. In these we have described, operations upon the eyeball and its accessory organs; upon the ear; upon the nose and nasal cavities; upon the mouth and its dependent structures; upon the neck; upon the thorax; upon the abdomen; upon the anus and rectum, and upon the genito-urinary organs.

The *Fourth Part*, occupying thirty-eight pages, and illustrated with nine plates, is subdivided into two sections, the one devoted to plastic operations, the other to subcutaneous operations. On many of the sub-

jects given under the foregoing enumeration, nothing very new was to be expected. Our object, on the present occasion, is not to attempt any thing like a minute analysis, but rather to convey, as far as we are able, an impartial account of the main features of the work; noting its more striking passages, pointing out what appear to us to be occasional omissions, oversights or errors; dwelling now and then on such portions as appear to be original with the author, and which, as far as we can judge, consist mostly of descriptions of operations which he has either projected or performed.

Dr. P.'s mode of describing the various classes of surgical operations, is quite as clear and systematic as that of the authors whom he has chosen as his models. Before taking up the details of the operative procedures, he lays down some general observations applicable to the occasion; with a brief but comprehensive description of the surgical anatomy of the parts involved; and occasionally, but only when necessary, a brief account of pathological changes that require surgical interference. Little or nothing is said of pharmaceutical management, or of dressing and bandaging, prior to or after operation; subjects of paramount importance, but too often excluded from what has of late been technically called operative surgery. The details of operative procedures proper, are arranged, as usual, under the names of such surgeons as have the credit of having either suggested, practised, modified or recommended them.

PART FIRST. Elementary and Minor Operations.—Of this division of the work, in which the author has very closely followed Bourguery, the *first section* is occupied with an account of the *bistoury*, its history, shape, the various modes of holding it, and the different forms of incision; and with a similar account of the *scissors*;—elementary details, proper enough in a treatise or course of demonstrations, but never thought of under any other circumstances.

The *second section* is devoted to the modes of removing parts by *ligature*. Here we have described the materials of which ligatures are composed, general rules for applying them, their various modes of application, and some judicious remarks on their effects.

The *third section* commencing with general observations on *phlebotomy*, speaks in course, first, of venesection at the bend of the arm; second, at the foot; next, at the neck; then of venesection in the neighbourhood of the affected part, and of bleeding from the cephalic vein. The anatomical descriptions in this section are worthy of special attention; but we have not space for transcribing them.

In the *fourth section*, speaking of *arteriotomy*, we find the author's first attempt at originality. The merits and peculiarities of his process for opening the temporal artery, we need not stop to consider.

The *fifth section* furnishes us with a full and interesting account of the articles employed as potential *cauteries*, their uses and modes of application; and with an account of the forms and uses of the actual cautery.

In the *sixth section*, on *reunion by suture*, and in the four subsequent sections, which are sufficiently full, we find little worthy of special note. The *eleventh* or last section of this division of the work, is one of considerable importance. *Hemostatics* or the means of arresting hemorrhage, we here find divided, first, into those applicable previous to operations; second, those employed during operations, and third, those that are called for afterwards. Under the first head we have compression by the hand,

with or without the aid of pad or compress; and next compression by instruments alone. Of these the first and oldest next to the simple bandage, is the *garot*.

"This was devised by Morel, in 1674, as a substitute for the circular bandages or ligatures employed previous to that period, for the purpose of arresting hemorrhage. As first used it consisted merely of a band or handkerchief twisted tight with a stick. This simple contrivance, from the convenience of its application in the field of battle, received the name of *field tourniquet*. The *garot*, as it has been latterly modified, consists of a pad to be placed on the skin above the artery, and which presents on its free surface a ring for the passage of the web or strap."—P. 92.

The account given by Dionis of the *wrench* or *garot*, is, that it was invented about thirty years before his time, at the siege of Besançon, by an army surgeon. It is called, says he, a *tourniquet*, because that, by turning the two little sticks run betwixt the arm and the ligature made of tape, we draw it as hard as we please. (*Dionis*, p. 388.)

The detached pad of Charrière, a useful instrument, recently introduced for compressing superficial vessels, is thus described:—

"The pad is attached to a plate, and resembles somewhat the lower frame of the French tourniquet, and is forced down over the artery by fastening the two ends of the strap after they have passed round the limb, upon the rows of buckle teeth with which its raised lateral margins are provided."—P. 29.

In speaking of venous hemorrhage during operations, our author, after accounting for its continuance, and describing several means of arresting it, goes on to say, that,

"As a last resort, each vein may be tied as an artery, though this measure is always attended with more or less risk of phlebitis. The same plans are to be pursued for the purpose of arresting bleeding from the veins after operations."—P. 33.

As a comment upon this passage, which we entirely approve, we may remark, that, after no inconsiderable observation, we do not remember to have seen phlebitis ensue simply as the result of applying a ligature to a *healthy* vein, although we have seen it follow an abrasion of the vein, made in attempting to secure the accompanying artery. The danger of phlebitis from the application of ligatures to veins after amputation, is probably not so great as we have been led to believe by the numerous catastrophes following their application to varices. The great danger of interfering with varicose veins, without reference to the particular modes of attacking them, depends upon the fact, that these vessels are already in a disordered condition, often in a state of chronic inflammation. To place a thread upon a diseased vein is quite a different and much more serious operation than to apply it on a healthy vessel.

In speaking of the means of arresting hemorrhage after operations, Dr. P. lays down some directions, which, to us, appear open to criticism.

"In parts which are inflamed the structure of the artery is sometimes found so soft as to cut across in the closing of the knot. The *mediate* ligature, as it is called, is then to be applied in the following manner: a thread is to be armed with a curved needle at each end; one of these needles is passed in a semicircle through the tissues at a little distance from the artery, and the second in a similar manner on the other side of the vessel, coming out near the point where the first entered. The thread thus passed is to be tied on the parts which it embraces," &c.—P. 34.

The course of procedure here recommended is, to say the least, rarely called for—we might venture to say, never. We cannot see the necessity for applying a ligature upon an inflamed artery at all. For arresting spontaneous arterial hemorrhage the ligature should be placed above the diseased portion, and the same remark holds good in the management of aneurisms. Again, says Dr. P.,

“Occasionally we find the larger artery, after amputation, so ossified in its structure as not to close without crushing under the loop. Under such circumstances I have succeeded satisfactorily by plugging the orifice with a piece of linen compress, and tying the vessel over it; when the ligature becomes detached it will bring away the plug. Professor Mütter has succeeded in nearly a similar way, by plugging the orifice with a portion of muscle from the detached limb.” —P. 34.

The outer or cellular coat of an artery, as we take it, is rarely the seat of ossific deposits; and as it is by the compression of this coat mainly that the ligature operates in arresting hemorrhage in healthy vessels, we do not see the policy of the foregoing directions when the vessel is ossified. The danger of secondary hemorrhage after applying ligatures to ossified arteries is not so much from the sudden laceration of their coats as from their disposition to subsequent inflammation and erosion. The plug inserted into the orifice of the diseased artery is surely not the most likely means of guarding against such accidents. As to the choice between the plug of linen and the plug of muscle from the detached limb, we confess our preference, if forced to use either, would be in favour of the former. The detached muscle, strictured and compressed by a ligature, must go on to speedy decomposition; and, in decomposing, become a source of irritation to the living tissues. Placed within an inflamed or ossified artery, as it appears to us, it would rather favour than prevent the occurrence of secondary hemorrhage.

PART SECOND. *General Operations, or those practised with reference to one or more particular tissues.*—The first section of this division is occupied with *operations upon the veins*, exclusive of venesection and of hemostatic measures, both of which have been already noticed. Dr. P. speaks first of transfusion of blood, and subsequently of varicose veins.

In our first reading we had marked a few passages under this latter head as calling for criticism. But, in turning to the volumes of *Bourgery*, we find that certain omissions, and a somewhat confused repetition of processes, that are not very distinct, are the fault of the latter rather than of Dr. P. The same examination also exculpates him, in our view, from having failed to notice a mode of treating varices, which was first noticed in an article on varices, published in the number of this *Journal* for January, 1843. (See p. 57, case 17th.) To this, however, we cannot allude further at present, than to remark, that this modified way of applying pressure, if carefully followed out, and continued in from six to twelve weeks, will often succeed in effecting a permanent cure, and will always afford relief. The pressure should be as great as the patient can bear without interrupting the circulation, and kept so through the whole course of treatment, the patient in the mean time walking about.

The second section of this division of the work, occupying much greater space than either of the foregoing, is devoted to *Operations upon the Arteries*. After some general observations on the circumstances calling for this use of the ligature, and on the various stages of the operation, Dr. P.

proceeds to the mode of securing particular vessels. By way of illustrating the usual manner in which the several arteries are spoken of, we venture upon the following example, as the first in order, and among the briefest.

"Of the Arteria Innominata.—Surgical Anatomy.—The arteria innominata is, after the aorta and pulmonary arteries, the largest arterial trunk in the body. It is given off from the top of the arch of the aorta to the left of the middle part of the upper bone of the sternum, and a little more than half an inch from its upper margin. It passes from this place obliquely upwards and outwards, to a point immediately behind the sterno-clavicular articulation of the right side, at the upper margin of which it divides into the right primitive carotid and right subclavian. In its route it traverses the superior thoracic fascia of Cooper, (which is an important means of protection to the cavity of the chest,) about four lines below its place of bifurcation. The trunk of this vessel is usually found from an inch and a quarter to an inch and a half long. Its diameter in a well-developed adult is about half an inch. The place of its division is deep behind the sternum, from half an inch to three inches from the inner surface of the top of that bone. In front, the vessel is separated from the sterno-hyoid and thyroid muscles by loose cellular tissue, in which are lodged many of the inferior thyroid veins, that discharge into the left subclavian. Between these and the bone lies one part of great importance, the transverse vein, (left vena innominata,) which passes over from the left to the right side, but so near the root of the vessel, however, as to be out of the way of the operation.

"When the head is thrown forcibly backwards, and to the left side, the arteria innominata is drawn upwards, so that its point of bifurcation, as seen in Plate 8, fig. 1, is considerably above the sterno-clavicular articulation. *Posteriorly*, it crosses obliquely the root of the trachea. On its *inner* face is the left carotid, and in this angle of divergence, between the two vessels, projects the trachea. *Externally*, it rests for the greater part of its course upon the pleura covering the upper surface of the right lung. The right subclavian, and right jugular vein, and the common trunk they form, as well as the pneumogastric nerve, are placed so much on the outer side of the artery, at the point where it is tied, as not to be endangered in the operation, unless the surgeon errs by hunting too far outwards for the vessel, which, it is to be recollected, is lodged between the right margin of the trachea and the right sterno-clavicular articulation, immediately behind the sternal origin of the sterno-cleido-mastoid.

"Anomalies.—This great trunk is but rarely seen to deviate from the usual description. It occasionally, however, varies in regard to its direction and length, and has been found altogether wanting. I have in my cabinet several specimens of transposition of the great vessels coming off from the arch of the aorta. In one, the right subclavian originates on the left side, and crosses to the right, between the trachea and œsophagus. In another, having the same origin, it passes behind both these tubes. In a third, the two carotids spring from a common trunk, &c.

"Anastomosis.—Spontaneous aneurism of the arteria innominata itself has many times been met with, and instances have been noted by two observers, where it was found with one or both of the branches that arise from it obliterated after death. The anastomosing branches that may restore, under such circumstances, the circulation to the right side of the head and neck, are the branches of the left vertebral and carotid; and the thyroid, cervical, intercostal and internal mammary of the two sides, anastomose together so as to be able to return the blood to the right arm by the way of the supra and sub-scapula, external thoracic and circumflex vessels. The fact of its accidental obliteration serves in a measure to show the *possibility* of a successful result in the case of its being tied. The honour of having first performed this most serious operation is due to Professor Mott, of the University of the city of New York.

"Operation.—Process of Mott.—(Plate 8, fig. 1.)—The patient is placed in the recumbent position, with the neck slightly flexed and supported with a pillow,

and the face turned to the opposite side in order to relax the sterno-cleido-mastoid muscle. The surgeon, standing upon the right of the patient, makes a transverse incision of three inches in length, commencing at the median line of the neck, and extending outwards parallel with, but half an inch above the upper border of the clavicle. Another incision of the same length is made along the internal border of the sterno-cleido-mastoid, terminating at the commencement of the first. The platysma muscle and the superficial fascia are next carefully opened so as to expose the sternal portion of the sterno-cleido-mastoid, which is to be divided in the grooved director previously passed behind it. The inner two-thirds of the clavicular origin of the muscle is (are) to be cut in a similar manner; the muscle is then to be reversed upwards and outwards, as seen in Plate 8. The sterno-hyoid and thyroid muscles are now to be divided, after having been cautiously raised on the director. The surgeon then opens with the finger or the director the cellular tissue in the direction of the vessel, carefully avoiding the right internal jugular vein, which is found a quarter of an inch to its outer side, and the inferior thyroid veins, which usually cover it in front, and are to be drawn off laterally. The finger falls first upon the primitive carotid near its root. The surgeon turns this vessel downward, and cautiously tears the cellular tissue till the innominate is exposed. The vessel in question being now discovered, it is to be separated in its outer or right margin from the vena innominate of the same side, with the end of the director, and then pressing off lightly from it the vein and the recurrent-laryngeal nerve, the ligature is carried with a curved aneurismal needle from without inwards around the vessel.

"In operations upon the subject, I have found it more convenient to make the longitudinal incision first, as the skin becomes relaxed after the transverse one is made. Before attempting to pass the ligature, I find it best to raise with the forceps and divide in the front of the vessel a dense cellular layer, which is an extension downwards of the deep-seated fascia of the neck. Professor Mott secured the vessel with the ordinary silk ligature.

"Several other processes have been devised for the ligature of this artery. Græfe, who followed Dr. Mott in the operation, made only a longitudinal incision along the inner side of the sterno-cleido-mastoid, and partly with his finger and partly with the handle of the scalpel, separated the parts down to the carotid near its place of origin. Following this vessel, he reached the innominate, which he detached behind the upper part of the sternum from its sheath, so as to get his finger around it. M. Manec directs only the transverse incision to be made, and through that proceeds to isolate the vessel.

"*Process of King.*—This as last modified consists of an oblique incision, carried inwards and upwards from the right sterno-clavicular articulation over the supra-sternal fossa, to the left sterno-cleido-mastoid muscle, the surgeon standing on the left side. The artery is to be sought for between the trachea and the sterno-thyroid muscles, and surrounded with a ligature passed from without inwards. This process, though brilliant in its execution in the dead body, must be attended with great difficulty in its application to the living, from the contraction of muscles and the effusion of blood in so narrow a wound. That of Mott is to be preferred to all, as the most judicious in its plan, and likely to be most successful, as leaving less to hazard in the delicate manipulations required. In each of the several instances in which the operation has as yet been performed, the patient sunk from hemorrhage between the periods of nineteen and sixty days; and it is yet a question whether the great size and depth of the artery, its proximity to the heart and probable pathological condition in aneurisms of the carotid and subclavian, do not present such difficulties in regard to the formation of a clot in the side next the heart by the time the ligature separates, as to offer insurmountable obstacles to its successful performance. In Manec's experiments upon the inferior animals, in which the effusion of coagulable lymph takes place with greater facility than in man, the safe obliteration of the vessel, even when previously healthy, occurred but twice in four times. Still, circumstances may arise to justify its performance, especially when it is considered that the only alternatives presented are little to be relied on, viz., the securing

of the subclavian or carotid in the distal side of the tumour after the methods of Brasdor and Wardrop, or the uncertain process of Valsalva."—P. 42-3.

Dr. P. has not furnished, as by a little research he might have done, any account of the several attempts that have been made to secure the innominata since the date of Dr. Mott's operation, with the exception of his allusion to Græfe's case. Some of these, it is true, have not been published; but all, or most of them, are sufficiently well known to practical surgeons. Taken in connection, they furnish a most useful and admonitory lesson to those meddlesome operators who hold that a precedent of a distinguished name is forever afterwards sufficient to warrant them in any thing they may attempt.

We shall not follow Professor Pancoast very closely through the remainder of this important section on the modes of securing the main arteries of the body; but content ourselves by offering a remark or two on a few detached passages. And first, in speaking of the different needles for passing the ligature, he appears to have forgotten the claims of his fellow-townsmen, Drs. Hartshorne and Parrish, to an instrument which has sometimes been called the American aneurismal needle, and which some of the European writers improperly attribute to Dr. Mott. One or two other instruments more recently introduced for passing ligatures, might also have been noticed.

In speaking of the free anastomosis of the carotid arteries and the rapidity with which the circulation is restored to either of these vessels after ligature, Dr. P. observes, that

"It is for this reason that ligature of the carotid is now so commonly abandoned in the treatment of erectile tumours seated on the branches of that vessel."—P. 45.

The foregoing is the first intimation we have had of the sudden change in the views of the profession in reference to the treatment of erectile tumours by cutting off their supply of blood. It is only a few months since we witnessed, at the N. York Hospital, a most formidable disease of the sort in an infant only six months old, involving the forehead, eyelid, lips and other parts on the left side of the face, effectually overcome, and gradually subside by a sort of sloughing and ulcerative process, after the application of a ligature to the left common carotid, by Dr. J. K. Rodgers. We do not hold that this mode of treatment, which was instituted by Pelletan, and has proved successful in the hands of Travers, Dalrymple and numerous other surgeons, will always succeed. But if we now recollect rightly, it has oftener succeeded where the disease was seated among the ramifications of the carotid artery, and where this vessel was consequently the seat of operation, than under other circumstances. The remark which we have above quoted is more applicable to carcinomatous than to erectile tumours. The former have occasionally been attacked in this way. But their parasitic organization renders them less immediately dependent than the others on the state of the circulation in healthy tissues among which they are situated; and, hence, the attempt to cure them by cutting off their supply of blood, has generally proved unsuccessful. Dr. P. has here evidently been misled by a term employed by Bourgery. *Erectile tumours* should not be looked upon as equivalent to "*tumeurs sanguines*." The latter includes fungus hematodes and other carcinomatous growths as well as erectile tumours.

The proximity of the internal jugular to the carotid exposes the former to occasional injury in attempts to secure the artery.

"If the internal jugular vein should by accident be opened, a casualty which has sometimes happened, it should be seized at once with the thumb and finger; a couple of fine pins are then to be passed through the edges and across the orifice, and a delicate silk ligature tied below so as to embrace the opening; the pins may then be withdrawn."—P. 47.

It strikes us that such a procedure would be exceedingly liable to be followed by secondary hemorrhage. We would much prefer either resorting to simple pressure, or to a ligature placed completely around the vessel, as in the case of Mr. Simmons, of Manchester, mentioned in connection with the foregoing passage—and in a case which occurred a few years since in the practice of Dr. Vaché, of N. York. In the latter instance, the patient, a child five or six years old, subsequent to an attack of scarlatina, was seized with gangrenous inflammation, which destroyed the greater part of the soft tissues on the side of the neck, and at length reaching the deep jugular vein at its upper part, led to sudden and alarming hemorrhage. Dr. V. applied a ligature around the vessel just at the point where it emerges from the skull. The hemorrhage was checked; the ligature came away with the dressings, on the third day; and the child rapidly recovered.

Dr. Pancoast, in this section of his work, gives several processes for securing blood-vessels, of which he claims to be the projector. Among these are his process for taking up the lingual artery, which, however, he appears never to have practised upon the living subject; his operation, once practised, upon the posterior auris; his operation upon the temporal, "perfectly successful in several instances;" upon the axillary, which for years he "has been in the habit of exhibiting to his class;" upon the anterior intercostal in the forearm, as yet simply projected; and perhaps one or two others. The merits and peculiarities of these several operative procedures, some of which appear to be worthy of attention, we cannot now stop to discuss.

"In cases of popliteal aneurism," says Dr. P., "the great freedom of anastomoses between the upper part of the thigh and the ham, has frequently caused a return of pulsation in the tumour before its contents have been absorbed without interrupting the cure; though in some cases, to render it complete, it has been found necessary to employ, in addition, pressure upon the surface of the tumour."—P. 75.

In connection with this passage we would remark, that ligature of the femoral, for the cure of popliteal aneurism, in order to be effectual, does not necessarily require a total arrest of circulation in the vessel at the ham. In one instance we have known the aneurismal tumour, at the popliteal space, that had apparently been cured by ligature of the femoral, return suddenly after an interval of a year, and again disappear on the application of a ligature to the same vessel above the profunda.

Before leaving the subject of the arteries, we would remark that we have met with a few verbal inaccuracies, probably from inadvertency in proof reading, which might mislead the student, and which, therefore, require notice. Thus, Dr. P., at p. 79, makes the extensor pollicis pedis muscle, as it passes downward, cross *behind* instead of in front of the anterior tibial artery; and places the tibialis anticus muscle in the middle of

the leg, on the *outer* instead of the inner side of the same vessel. In the description of plate xiv., left side, at page 70, he calls the *external* iliac artery the *internal*

The next, or *third* section, is occupied with *Operations for Diseases of the Bones and Joints*, under which we have, 1st, those for dropsy of the joints; 2d, for the removal of foreign bodies from the joints; 3d, for ganglions, &c.; 4th, for dropsical tumours of the bursæ; 5th, for complicated fractures and luxations; 6th, for false joints; 7th, for deformities from irregular union of broken bones; 8th, for exostosis; 9th, for bony cysts; 10th, for necrosis; 11th, for trepanning; and 12th, for resection of bones. We can touch only upon a few of these subjects.

In treating of *articular effusions*, Dr. P. speaks of tapping either with the bistoury or trocar, of mucilaginous injections, and of injections of iodine after the method of Mr. Martin, but says nothing of a practice which not long since had considerable repute, especially in New England, and which, we believe, was original with the late Professor Hubbard, of New Haven. In a manuscript account of his practice, which we happen to have in our possession, he thus speaks of it under the date of June 5th, 1837.

“*Serous effusions in consequence of inflammation of the joints.*—In such cases, whether arising from external injury or not, especially when absorption could not be produced by external remedies, I have made a puncture into the bursæ and discharged the serous fluid. The fluid usually collects again. In two days I probe open the orifice and discharge what may be collected, usually a small quantity. I then inject a solution of corrosive sublimate, (grs. x to a pint,) keeping the injection in a few minutes, then pressing it out. Considerable pain and irritation often follow. Opium soon relieves these, however. Three days afterwards I probe open the orifice again; and if the serous fluid continues to be discharged, I inject again. I would remark that I open the orifice every day after the injection. At first the discharge is considerable, semi-purulent. In three days it again becomes serous. I have never been obliged to inject more than two or three times, and three or four days apart. One injection often suffices; and, at the end of three days, I find adhesion has taken place. I have treated serous effusions of bursæ not connected with joints in the same manner, and with good success. I have been surprised that, in the affection called, in Great Britain, House-maid’s Knee, extirpation, and, in some instances, re-extirpation has been practised. I have never failed to cure it in the mode just mentioned.”

In suppuration of the joints, and in some instances after effusion of blood in these cavities, he speaks of having successfully resorted to the same practice. We do not undertake to vouch for the merits of the treatment as applied to the joints, having never resorted to it ourselves; although, as long ago as 1833, we had employed the same solution successfully in the treatment of psoas abscess. It appears to us, however, quite as worthy of a trial in treating diseases of the joints as the iodine solutions; and its author, Dr. Hubbard, formerly Professor of Surgery in Yale College, quite as worthy of mention in connection with the practice as Mr. Martin for his iodine injections.

In speaking of the removal of foreign bodies or *movable cartilages* from the joints, our author appears to give the preference to the subcutaneous incision first devised by M. Goyraud, and more recently recommended by Mr. Liston. Now, of the ten or twelve instances in which we have seen movable cartilages taken from the joints by simple incision,

the only case followed by serious symptoms was one in which a minute vessel had been divided, from which blood escaped into the joint subsequent to the operation. We cannot see how the subcutaneous incision is to obviate such accidents, or to render them less serious. And the difficulty of removing the cartilage from the cavity of the joint by a subcutaneous incision is acknowledged to be very great, even by those who have adopted and recommended the practice.

In accordance with Bourguery, Dr. P. states, that there are three methods of remedying the inconveniences resulting from the solidification of the joint, which constitutes *true ankylosis*.

1. "To re-establish the movements of the joints by rupturing the adventitious junction between the bones.

2. "To establish a new point of motion by the creation of a false joint.

3. "To place the limb in a new position by taking out a wedge-shaped portion of bone, when it is ankylosed in a direction that renders it inconvenient or useless."—P. 88.

To these he might have added a fourth, viz.: To bring the contracted or deformed limb into a useful position by gentle and protracted pressure. We have witnessed at least two instances in which the leg, ankylosed nearly at right angles with the thigh, has, after several months, treatment in this way, been gradually straightened; not by any yielding of the ankylosed joint, but by the bending of the tibia below it, the bone yielding at the point of union between its shaft and its upper articular extremity. These instances were in growing boys of strumous diathesis.

In speaking of the treatment of *false joints*, Dr. P. appears, as in many other instances, to follow his French guide, and, in consequence, to give credit for modes of practice to foreigners which belong to the surgeons of his own country.

"M. Flaubert, of Rouen, has proposed, after resection, to unite the ends of the bones by passing a wire in the manner of a suture through the fragments themselves."—P. 94.

The foregoing statement is made by both Malgaigne and Bourguery. The former makes no mention of it in the earlier editions of his manual; but, in the edition for 1840, he speaks of it as a practice *just introduced* by M. Flaubert. Now, had Dr. P. consulted the New York Journal of Med. & Surg., Vol. I., for Oct., 1839, he would have there found an exposition of this mode of treatment, as for many years in common use in the New York Hospital, and first practised there by Dr. J. K. Rodgers, in July, 1826. There is no doubt that the practice which Dr. P. has credited to the French surgeon was suggested by Dr. Heard's paper on this subject to which we have just referred. When are we to receive our own from such authors?

In speaking of *Excision of the Upper Jaw*, Dr. Pancoast makes a remark which appears to require some qualification.

"The great improvement of modern surgery, in reference to the malignant growths of the upper maxillary bone, consists in its amputation entire at its points of articulation, instead of attempting to cut out with saws, forceps and gouges, the diseased mass alone."—P. 108.

The truth of the foregoing observation is not to be questioned, where the greater part of the bone is affected, or when the disease appears to have attacked it at several distinct points. But there are many cases in

which the malignant action is circumscribed within a very limited space; and in such it would, as appears to us, be cruel to attempt the removal of the whole of the upper jaw. Dr. P. might very properly have introduced a paragraph on *partial resections* of the upper jaw, and have accredited Dr. A. H. Stevens, of New York, for his well-known operation for removing the greater part of this bone, which was performed in 1823, in a case of what was supposed to be malignant disease. His patient, then a child, is now a member of the New York bar. Dr. P., however, has alluded to the case, in connection with operations upon the maxillary sinus, where it appears to have been taken from an article on Tumours of the Nasal Fossæ, which was published in the number of this Journal for April, 1842.

"The resection of the lower jaw, either in whole or in part," says Dr. P., "is an easier and much less formidable operation than that of the upper."—P. 112.

This assertion is by no means in accordance with our own experience. Few operations of equal magnitude and severity are performed with greater facility or with greater rapidity than Gensoul's operation for extirpating the upper jaw. In the two instances in which we have had occasion to assist in this operation, it was accomplished in a few moments, and the only vessel requiring ligature was the internal maxillary, which was seized with the fingers and secured, after the removal of the bone, without the aid of either forceps or tenaculum. The operation upon the lower jaw is always more tedious, attended with greater hemorrhage, and even with greater danger, especially where the operation involves the symphysis of the bone. In one instance, in the hands of a most skilful surgeon of New York, the patient, under these circumstances, died immediately after the operation, and before the surgeon had left the room, and, as we are told, apparently from closure of the glottis, by the sudden recession of the muscles of the tongue, &c., after separating them from their attachment at the symphysis of the lower jaw. Dr. P. himself has had occasion to notice, in his book, other similar catastrophes.

A serious inconvenience, in the eyes of some surgeons, after partial resections of the lower jaw, is the subsequent torsion of the chin.

"To prevent the falling of the sides of the bones inwards, Mr. Nasmyth, of Edinburgh, has devised an ingenious little instrument, a double silver case, to contain the upper and lower molar teeth, which should be made to fit on previous to the operation."—P. 113.

In a case of removal of a portion of the lower jaw, for an osteo-sarcomatous tumour, related in the N. Y. Journ. of Med. and Surg., vol. iii, for 1840, p. 357, the chin afterwards inclined slightly to one side. But on examining the patient some eighteen months or two years afterwards, it was found that the deformity had entirely disappeared. The divided ends had become firmly bound together by an intervening substance, nearly as solid and inelastic as the bone itself.

The success attending operations for *partial resection of the vertebræ*, as Dr. P. well observes, "is always doubtful," more so, however, in consequence of previous injury requiring such operation than from injury necessarily inflicted by the operation itself.

"Jæger relates six instances in which it has been done, but in two only of these with advantage. In four well-known cases, those of Cline, Tyrrel, Barton and A. G. Smith, the operation did not eventuate successfully."—P. 117.

We remember to have witnessed, in the practice of M. Cusack, of Dublin, in 1836, the case of a young woman who had had the spinous process of one of the dorsal vertebræ carried away by a gun-shot. Just after the accident, as M. C. assured us, he was enabled to introduce the point of his finger through the wound into the spinal cavity. The patient, when we saw her, had so far recovered as to be able to walk about, the wound having already cicatrized.

In speaking of resection of the *tarsal bones*, Dr. P. makes no mention of a case in which Dr. A. H. Stevens extirpated the *astragalus* successfully, after a severe compound dislocation, in 1826, probably because he found no notice of it in Bourguery. Neither Velpeau nor Malgaigne refers to it. He reports a process of his own for resection of the *first metatarsophalangeal articulation*. The case calling for this occurred to him in 1836. We need not repeat the operative procedure. The parts afterwards anchylosed.

"The only difficulty encountered in the after treatment was the tendency of the extensor muscle to elevate the point of the toe. Should I again have occasion to excise this joint, I would prefer to divide this tendon, in case I approximated the bones, inasmuch as the necessity for its use would be greatly diminished afterwards."—P. 132.

The next or *fourth section*, occupying between forty and fifty pages, is devoted to *amputations*.

These have been so admirably systematized of late, particularly by Lisfranc and a few others, and so well described by most writers on the subject, as to have left but little room for originality. The only mode of amputation claimed as original by Dr. P., is one of amputation *at the knee joint*, described in the following quotation. The case calling for it was one of necrosis of the tibia, in a female of middle age. Cicatrization was complete at the close of the fourth week.

"*Process of the author. Three cutaneous flaps.* (Pl. xlii. figs. 2, 3, 4.)—The patient is to be placed upon the abdomen. The leg, flexed at a right angle with the thigh, is held by an assistant. The surgeon, placing the thumb and forefinger upon the condyles of the tibia at the opposite side of the leg, makes, with a common scalpel on the front of the upper part of the leg, a semilunar incision which extends as far as three inches below the tubercle of the tibia—one extremity resting on either side an inch below the joint. The flap of skin is now to be rapidly dissected towards the joint. The leg is then to be extended and made horizontal. The point of the knife is next to be entered through the skin, at the middle of the back part of the leg, an inch and a half or two inches below the fossa of the popliteal space, and carried vertically downward for the space of three inches. From the lower end of this, the knife is to be continued round on one side, to strike the line of the first or anterior incision, so as to mark out a second flap, convex downwards, and extending a little lower than that of the one in front. The lower end of the vertical cut is then united, by a similar convex sweep of the knife to the other margin of the first incision, so as to form a third flap. The two posterior flaps are next to be dissected from the fascia up to their base. The leg is now to be again flexed, and from the general loosening of the flaps already made, the insertion of the ligamentum patellæ upon the tibia will be exposed. This is to be divided across, and the joint opened upon the front and sides, so as to leave the semilunar cartilage on the head of the tibia, the crucial ligaments, as they become subsequently useful as a nidus for granulations, are to be divided at their connection with the latter bone, and the posterior ligament lastly cut. The leg, which is now loose, is to be twisted on the thigh. An assistant grasps the popliteal artery with the thumb and finger,

and the surgeon divides below, at one stroke with the knife, the remaining parts, consisting mainly of the two heads of the gastrocnemius, some of the hamstring tendons not previously cut, and the popliteal vessels and nerves. The patella is to be left in its position.

"The whole operation may be done with the scalpel; the femoral artery should be compressed with the tourniquet.

"*Dressing*.—The anterior flap is to be brought over so as to cover the condyles, and united by suture to the two lateral flaps, which will be found so considerably retracted as to fit in neatly to each other along the notch between the condyles. A few strips of adhesive plaster are to be applied, and a roller brought down from the upper part of the thigh, in order to overcome the tendency of the loosened muscles to retraction, and fix the patella near to the end of the bone."—P. 169.

Owing to the shortness of the flap, in the operation above described, one of the condyles became exposed, and furnished Dr. P. an opportunity of studying the changes that take place in the articular cartilage after amputation at the joint.

"This structure neither reddened nor became painful, so as to exhibit any coating of synovial membrane, or other appearance of organization. It became, by the end of a week, softened and pulpy on its free surface, in the same manner as occurs when the joint is subjected to the macerating tub of the anatomist. The pulpy layer, which was so soft as to leave a track when rubbed with the end of a probe, was insensibly removed with the discharges; by a continuation of the same process of softening and removal, the thin lamina of bone covering the auricular face of the condyles was completely bared of the cartilage in the third week."—P. 169.

In speaking of amputation at the hip joint, Dr. P. has made no allusion to the case of Dr. Mott, which, if not the first successful one, was the first in America.

Before leaving the consideration of the bones, we may remark another oversight on the part of Dr. P., or his prototypes, in failing to notice the practice of the late Dr. N. Smith, of New Haven, in the treatment of internal suppuration of the bones by trepanning; and, we might add, Mr. Liston's mode of treating nodes, by a free subcutaneous division of the periosteum. This latter practice we have employed somewhat extensively, and can speak of it most favourably.

PART THIRD. *Special Operations, or those which are practised upon complex organs in particular regions of the body.* The first section under this general division, occupying about forty-five pages, treats of *operations upon the eyeball and its accessory organs*. These operations are arranged into four groups: 1. Those for affections of the lachrymal apparatus; 2. Those for the protecting organs of the eye; 3. Those for the ball of the eye; and 4. Those involving the orbit and parts within not specified above. Our observations on the mass of interesting details included in this section must be somewhat brief.

Speaking of *lachrymal fistula*, and of the various modes of treating it, Dr. P. gives the following appreciation of the relative merits of Ware's style, and the canula of Dupuytren.

"The comparative merits of the two instruments have not yet, perhaps, been fully decided. With the tube the operation is rapid, but little painful, and at once finished. There is no deformity left, and though there is some risk of the contrary, it may be followed with no further trouble or inconvenience. The tube is not, however, suited to cases where there is much thickening or ulceration of the sack, as the parts will not, under these circumstances, close above it. With the style there is a mark of observation left upon the cheek; the cure may

be less complete or followed even with a fistulous ulcer of the sack, but the operation is unattended with risk, and the instrument is always under the control of the surgeon—a circumstance which weighs strongly in its favour with the profession. Mr. Travers, who asserts that he has introduced the tube fifty times with excellent success, without having been required to move it in more than two instances, nevertheless, for reasons analogous to the above, gives preference to the mode of cure by the style.”—P. 187.

The removal of the tube, after having remained for a length of time impacted in the nasal duct, is occasionally an operation of exceeding difficulty. In one instance which came under our observation, in which a gentleman had worn the tube about a year, wishing to get rid of the distress which it occasioned, an attempt was made to extract it. But the surgeon, after the most patient and persevering efforts, continued for at least one hour and a half, and after inflicting much unavoidable suffering on the patient, was finally obliged to abandon the case.

In treating of ectropion, Dr. P. appears to think favourably of the attempt to cure it by excision of a V shaped piece extending through the whole thickness of the lid. In the few cases where we have seen this attempted, the edges of the wound, although properly drawn together by suture, did not unite; and the deformity consequent to the operation was worse than the original.

In speaking of artificial pupils, Dr. P., in reference to the method by “extension of the natural pupil,” says, “This is a process devised by Langenbeck, in cases where the pupil is in its natural condition, and the rays of light are intercepted by a central opacity of the cornea. It consists in puncturing the cornea as in the process just described, introducing a hook and drawing one edge of the pupil aside, so as to leave it strangulated in the wound of the elastic cornea, to which it soon becomes firmly connected by adhesive inflammation. By this means a circular orifice of the pupil is changed into an ellipsoid, and brought under a transparent portion of the cornea.” In attributing the original conception of this operation to Langenbeck, Dr. P. seems to have followed Bourguery, who observes:—“Créé par M. Langenbeck pour un cas où la pupille normale était interceptée par une tache centrale de la cornée, cette méthode [extension de la pupille naturelle], n’est rien autre chose qu’une application au bord pupillaire du procédé qu’il avait ajouté au décollement. Elle consiste à amener par tiraillement, dans une petite ouverture faite à la cornée, un des points de la circonférence pupillaire de l’iris. Par ce moyen on obtient une extension ou un déplacement de la pupille naturelle, la traction changeant la forme de son orifice de circulaire en ellipsoïde.” M. B. gives, however, no reference by which this statement can be verified; and we suspect that had Dr. P. taken the trouble to investigate this claim, he would have found that the merit of first devising the operation cannot be awarded to Langenbeck. The subject is not, however, of sufficient importance for us to detain the reader with the history of this operation, for which the materials are before us.

Dr. P., under the same head, describes a process of his own, the object of which, says he, “is to get a good-sized aperture in the iris without injuring, in the least, the lens, the capsule, or the outer attachment of the iris.” The following is the author’s own exposition of it.

“This is accomplished, first, in dividing the radiating fibres of the iris near their ciliary margin, by a crescentic incision made at the same time with the

puncture of the cornea; and, secondly, by extending the anterior cut from the middle of the incision of the iris to the centre of the old pupil, dividing not only the iris, but the new membrane which has closed the pupillary orifice. These incisions will have this shape (—). The first one is made with the extraction knife of Wenzel.

"The patient is to be seated in a chair under a good light, as described at page 200. The upper lid is raised by an assistant. The surgeon seated in front, depresses the inferior lid, and taking the knife in his other hand, enters the point *through the cornea at the usual place of extraction*, as soon as it is seen in the anterior chamber, the point, by bringing the handle forwards, is directed obliquely backwards upon the iris, so as to pierce it about half a line from its ciliary margin,—for, at this place, the thin edge of the lens is so far removed from the iris as to prevent its being wounded. As soon as the puncture in the iris is made, the handle is carried backward, so as to bulge the iris a little forward with the point; the knife is then carried on, dividing the iris and cornea till the point of the instrument is advanced half-way between the place of puncture of the iris and the closed pupil. The knife is then to be carefully withdrawn. If this step of the operation be neatly executed, none of the aqueous humour will escape till after the removal of the knife, and then but in a very small quantity. The incision of the cornea will be less than a fifth of its circumference, and that of the iris will have a shape concentric with its outer margin.

"The delicate probe-pointed scissors of Maunoir are then to be inserted, closed, flatwise through the lips of the corneal wound. As soon as they have entered the anterior chamber the blades are to be slightly opened, and the handles turned so as to look obliquely downwards and forwards, in order that the blade next the cornea may not injure this structure. One blade is to be carried through the puncture of the iris, behind that membrane, and the other in front, as far at least as the centre of the old pupil; the handles are then brought directly horizontal, and the second incision made by closing the scissors. If the iris is healthy and unadherent, the operation is now completed. Not a drop of blood will have escaped; a beautiful artificial pupil will be at once formed. The base of the radiating fibres belonging to the outer part of the iris having been cut, the pupillary circular fibres, having now no resistance, contract and draw upon the two loosened triangles of the iris, so as to bring their edges into a straight line, and make the new pupil widest at the central position. The shape of the pupil will be such as seen at Pl. xlviii., Fig. 15. Immediate vision will be restored if the retina is in a healthy condition. The eye, however, is to be closed, and treated for a few days as after extraction, with the exception that the temples and margin of the orbit should be covered with the extract of belladonna to keep the iris dilated as widely as possible."—P. 216-17.

Closure of the pupil, without any opacity of the capsule or adhesion between it and the iris is of extremely rare occurrence. Still, as such a condition may present itself, and it is highly important, when it does, to preserve the capsule and lens uninjured, it may be worth while to inquire how far Dr. P.'s operation is calculated to answer its design. The risk (not to say certainty) of wounding the capsule of the lens in any attempt to pass a knife through the iris, has been considered so great that the best ophthalmic surgeons reprobate any such attempt. Dr. Mackenzie says it would be evidently wrong to have recourse to the operation of *incision*, (Pract. Treatise, 2d ed., p. 734,) and recommends lateral *excision*, in such cases. This is practised by making an incision of the cornea, then pressing on the eyeball so as to cause a prolapse of the iris, and finally excising with scissors the prolapsed part. This, which is the operation of Gibson, and has been performed by Beer and De Walther, with some slight difference in the operative details, has been generally considered as best adapted

to the case under consideration, as it subjects the capsule to the least risk of injury. But Dr. P., in his operation, has recourse not only to the reprobated method of *incision*, but he makes *two incisions*, and the second one under the most unfavourable circumstances. For both chambers of the aqueous humour being opened by the first incision, (through the cornea and iris,) that fluid must at once flow out;* and the contraction of the muscles of the ball will then bring the anterior capsule of the lens, the iris and the inner face of the cornea in complete contact. To accomplish the second incision, the points of the scissors must be forced, one between the iris and cornea, and the other between the iris and anterior capsule of the lens. Whether it is likely that this can be accomplished without wounding these parts, we leave to the reader to decide.

The new operations for *strabismus* are described at some length, and Dr. P., among others, details a process of his own; for which, however, we have not space. Under this head there is no notice of the fungous excrescences which are so apt to arise from the wound in the conjunctiva after it begins to cicatrize, and which frequently require excision; nor any allusion to suppuration between the eyeballs and its investments, consequent on the operation.

Sect. second.—The section *on the ear*, the second in this division of the work, we must pass over without much comment; observing merely that Dr. P. has *several times* performed the operation of puncturing the *membrana tympani* without much lasting benefit. It appears to us that the impropriety of this procedure had fairly been established long before Dr. P. entered the list of operators. We look upon perseverance in such procedures as another instance of the influence of bad example, and of the tenacity with which some surgeons hold to doubtful or injurious operative measures once instituted by distinguished teachers, even after such teachers themselves have long ceased to speak favourably of their own practice.

In the *third section*, including *operations upon the nose and nasal cavities*, Dr. P. remarks that the *septum narium* “is the almost exclusive seat of fibrous polypi.” This statement, if true, is new to us. According to Velpeau, the fibrous tumour has its special origin in the fibrous tissue that invests the bones of the nasal fossæ, and that lies between the bones and the proper mucous tissue. In a case published by Dr. Mott, and noticed in a former number of this journal, the fibrous growths were attached to the floor of the nostril. We find nothing in this section in reference to operations for the removal of encysted tumours, which frequently form about the *alæ nasi*, and in the removal of which the surgeon, unaware of their attachment, is very apt to lay open the nasal cavity, and in this way permanently deform the visage of the patient.

Dr. P. has, “on several occasions, removed by excision, carcinomatous or caruncular growths near the anterior orifice,” and has generally found it afterwards necessary to plug the nostrils to arrest the hemorrhage. He also gives a peculiar mode of his own for this latter operation.

The operation for opening into the maxillary sinus, says Dr. P., “may be required for dropsy or abscesses of the sinus, or in cases of the development within the cavity of polypous tumours, fungous or carcinomatous

* If a drop remains, it will, at all events, be evacuated the moment the points of the scissors, in the second step of the operation, are introduced into the incision in the cornea, as they can occupy but a portion of the wound.

tumours;" to which we may also add, for the cure of fistulous ulcers communicating with the cheek,—a troublesome instance of the latter sort that had existed a long time, we remember to have seen heal effectually and rapidly after puncturing into the sinus through the socket of one of the teeth.

In the *fourth section, on operations upon the mouth and its dependent structures*, Dr. P., speaking of hypertrophy of the upper lip, leaves us no room to suppose that the affection may yield to scarification and other means of local depletion; but proceeds at once to the operative measures. We would call his attention to a case of the sort published by Dr. Detmold in the *N. York Journal of Medicine and the Collateral Sciences* for July, 1844. Passing over the treatment of hare-lip, cancer of the lips, and anchylosis of the lower jaw, we come to the treatment of *salivary fistula*.

"The facility and success of the treatment, as well as the choice of the method for the cure of a fistula of this duct, depend much on the fact of the orifice being the result of a wound or a recent ulcer; or, if it be of long standing, whether the skin is healthy or diseased at its margin, whether the passage of the duct on the inner side of the fistula is open or closed; or, in fine, whether the fistula is situated anteriorly or posteriorly to the edge of the masseter."—P. 247.

Having paid some attention to these fistulæ, we have seen them heal spontaneously under each of the circumstances above specified. In front of the masseter, both after incisions for the removal of tumours, involving the duct, and after syphilitic ulcers of the cheek penetrating it; behind the masseter, where fistula had followed spontaneous abscess, and where the parotid had been necessarily injured in the removal of tumours in its neighbourhood. There is, then, in these fistulæ, a much greater disposition to spontaneous cure than surgical authorities are ready to admit; and unless we find the duct permanently closed between the fistula and its natural outlet, we are disposed to believe that, in most instances, the best practice would be to trust almost exclusively to the efforts of nature. The spontaneous cure after syphilitic ulceration, it is true, requires time. But we question how far, under these circumstances, the cure is to be expedited by either setons, sutures, cauteries, or other modes of local interference.

In connection with the operation for *extirpating the parotid gland*, we have an array of most of the American surgeons who have attempted it. The day has gone by any longer to question the fact that this gland has been extirpated; yet Dr. P. has done well to note the remark of that very judicious critic and observer, M. A. Berard, who states that, out of fifty-two attempts at the extirpation of this gland, in a diseased condition, not more than five can be said to have been effectual. In Professor Pattison's lecture on this subject, published in 1833, among numerous other cases, he cites four in which the gland is said to have been effectually extirpated by Dr. Bushe, of New York. One of these four cases of reputed extirpation of the parotid subsequently became a patient of the New York Hospital. The disease had probably been originally a carcinomatous degeneration of some of the lymphatic ganglions about the neck. The extirpation of what was considered the parotid did not, of course, effect a permanent cure. When the patient was admitted at the hospital the disease had nearly surrounded his neck. As a last resort, he was advised to submit to the ligature of both carotids. The operation of ligaturing both vessels, at one sitting, was performed by Dr. Mott, if we recollect rightly, in July,

1833. The patient survived only a few hours, and in the autopsic examination, the parotid gland was found in situ.

The opinion adopted by Dr. P. that "the scirrhus affection of the gland is attended by a contraction of its capsular investment, by which the deep-seated and irregular prolongations are made to recede from their beds, so as greatly to facilitate the process of extirpation," is one the correctness of which we must confess ourselves rather doubtful. If the disease has already gone so far as to produce a condensation of the capsule, we may expect, as a matter of course, that the tissues beyond this capsule are not entirely sound.

We must now hurry by what Dr. P. has to say on extirpation of the submaxillary gland, ranula, operations on the tongue, excision of the uvula, extirpation of the tonsils, and staphyloraphy, which complete the subjects embraced in the fourth section, with the passing remark that he has given processes of his own for the removal of scirrhus tumours of the tongue by a wire ligature, one for staphyloraphy, and a third for staphyloplasty.

Section fifth, including operations on the *neck*, *section sixth*, operations upon the *thorax*, and *section seventh*, operations upon the *abdomen*, offer nothing special to detain us until reaching the close of what Dr. P. has to say of abdominal dropsy; when, to our surprise, we discover that he has entirely omitted to mention the once-neglected but recently resuscitated operations for the removal of ovarian tumours. Whatever may be our own disposition to excuse him for this omission, we fear certain of his readers will not think well of it. Surely he must have been following his French leader so closely as to have, with poor Rip Van Winkle, been actually asleep to the revolutions that have been going on about him. The Cæsarian section operations for the removal of uterine polypi, and for the removal of the uterus itself, have also been omitted; but these, it may be said, belong to another department of the healing art.

In treating on hernia, Dr. P. describes, as a means of radical cure, a process of his own:—

"*By injection*.—This process, as employed by the author, is as follows:—The contents of the hernia must be completely returned into the cavity of the abdomen, for the process is only appropriate to cases of reducible hernia, and those which are not of large size. The apparatus required is a minute trocar and canula, (Pl. lvii., fig. 7,) a small graduated syringe, capable of containing a drachm of fluid, well fitted to the end of the canula, a good-fitting truss, for the purpose of making compression. The patient is to be placed on his back; the viscera are then to be reduced, and the truss applied over the external ring, for the purpose of keeping them up, as well as to prevent the possibility of the small quantity of fluid thrown in from getting into the cavity of the abdomen. The surgeon then presses the finger at the external ring, so as to displace the cord inwards, and bring the pulpy end of the finger on the spine of the pubis. At the outer side of the finger he now enters, with a drilling motion, the trocar and canula, till he feels the point strike the horizontal portion of the pubis, just to the inner side of the spine of that bone. The point is then to be slightly retracted and turned upwards or downwards; the instrument is then to be further introduced till the point moves freely in all directions, showing it to be fairly lodged in the cavity of the sack. The point of the instrument should now be turned into the inguinal canal, for the purpose of scarifying freely the inner surface of the upper part of the sack, as well as that just below the internal ring. The trocar is now to be withdrawn, and the surgeon, again ascertaining that the ca-

nula has not been displaced from the cavity of the sack, throws in slowly and cautiously with the syringe, which should be held nearly vertical, half a drachm of Lugol's solution of iodine, or half a drachm of the tincture of cantharides, which should be lodged as nearly as may be at the orifice of the external ring. The canula is now to be removed, and the operation is completed. A compress should be laid above the upper margin of the external ring, pressed down firmly with the finger, and the truss slid down upon it. The patient is to be kept from changing his position during the application of the truss, and should be confined for a week or ten days to his bed, with his thighs and thorax flexed, keeping up steadily as much pressure with the truss as can be borne without increasing the pain, in order to prevent the viscera from descending and breaking up the new adhesions while they are yet in the forming state, or avoiding the risk of their becoming strangulated, or being rendered irreducible by the lymph effused into the cavity of the sack.

"The author has practised this operation in thirteen different cases, in but one of which was there any peritoneal soreness developed that excited the slightest apprehension, and in this case it subsided under the application of leeches and fomentations. In several of these cases a single operation appeared to be perfectly successful. In others—where the sack was larger, or the patient was less careful in keeping the truss steadily applied during the first week, or from a cautiousness in introducing, in the first cases, a more limited amount of fluid—the effect was merely to narrow the sack, rendering a repetition of the process necessary for the cure. Of the permanency of the cure, *during several years after the operation*, the author is unable to speak, most of the patients operated on being temporary residents of the Philadelphia Hospital, and passing, after a few months, beyond the reach of inquiry. While under the cognizance of the author, they were employed without a truss as labourers on the farm attached to the institution, and in no one of the cases, during this period, had the hernial tumour recurred. It would, however, be but a proper measure of precaution to direct the truss to be worn subsequently for several months, in order to confirm the cure.

"The greater number of these operations were performed by the author eight years ago, before the classes of students at the Philadelphia Hospital, but as he was able to trace the future history of the cases but for a few months only, they were not deemed of sufficient importance for publication. Very recently M. Velpeau has published a process almost precisely the same as that just described."—P. 283.

As we have somehow or other fallen into the line of pointing out omissions, we may remark again before leaving the consideration of operations on the abdomen, that we find no allusion to an operation which Dr. Samuel White, of Hudson, has called *enterotomy*, and which he many years ago performed successfully for removing a silver teaspoon from the small intestines. (See note at page 331 in the present number of the Journal.)

Section eighth.—*The operations upon the anus and rectum* include those for imperforation of the anus, polypous tumours of the rectum, prolapsus ani, invagination of the rectum, cancer of the rectum, hemorrhoids, abscess at the side of the rectum, fistula, fissure, and stricture of the anus.

We cannot agree with Dr. Pancoast, in believing that in the treatment of hemorrhoidal tumours, the common ligature of silk or hempen thread is inferior to the wire ligature, nor that it is any more difficult to strangle these swellings by means of the thread than by the wire; but agree with him in preferring a combination of ligature and excision to the simple use of ligatures. The exposition of the pathology of hemorrhoids which he adopts, is far from being in accordance with our own views of

this affection: we cannot, however, stop to discuss this point here, but may refer for an exposition of what appears to us to be the true views of the pathology and treatment of this disease, to the *N. Y. Journ. of Med. & Collat. Sci.* for July, 1844.

Section ninth.—*The operations upon the genito-urinary organs* embrace, first, those upon the male; among which are those upon the scrotum, upon the penis, and upon the urethra and bladder, including the operations for stone; and, secondly, those upon the female, including lithotomy, suture of the perineum, recto-vaginal fistula and vesico-vaginal fistula. This section presents but little to detain us. The author's description of the operations for hydrocele, among which he gives one of his own, appears to us to be somewhat imperfect. His modification of the subcutaneous operation, for the use of varicocele, by the application of a ligature to the veins of the spermatic cord, as it appears to us, is not so free from danger and inconvenience as he supposes; nor would we, as he has done, choose it in preference to the operation of Sir A. Cooper. In the comment upon his operation, to which we refer, he remarks, that

“By keeping the cavity of the veins in the grasp of the ligature thus *constantly* closed, the risk of purulent absorption from the vein below is greatly diminished, if not entirely removed,” &c.—P. 314.

We have met with other similar allusions to Velpeau's doctrine of purulent absorption, in the course of this work. So long as such views have only a speculative bearing, they are not worth combating; but where they lead to improper practice, or to false confidence in certain operative procedures, it is time they were exposed. Does Dr. P. not know that after ligaturing a varix, the vessel may suppurate as well above as below the thread? If there is in pathology any fact established by the most careful and extensive observation, we hold that the occurrence of purulent cachexia, independent of any necessary previous absorption of purulent matter, is such a fact. The character of the work before us, however, does not require of us at present to enter upon the discussion of this most important question, further than to say that it is full time that the term purulent absorption, or purulent resorption, as applied to purulent cachexia, secondary abscess, and suppurative phlebitis, was entirely suppressed.

In speaking of phimosis, Dr. P. has again furnished us with a process of his own, but which we have not room to transcribe. The other subjects spoken of in this section we must hurry over, with the remark that we find, under the head of vesico-vaginal fistula, no allusion to the ingenious process of Dr. Hayward, of Boston, an account of which was several years since published in this Journal. Is this omission chargeable on Bourgency?

Before leaving the third division of the work, treating of special operations in particular regions of the body, we must observe that, in imitation of his French models, Dr. P. has omitted to speak of any operations in the course of the spinal column, as for the removal of tumours and for the cure of spina-bifida;—another rather important oversight, especially as some of our own countrymen might have here been mentioned among the successful innovators in the field of operative surgery. We have some facts of our own on this latter subject, which we may some time hereafter take occasion to present to the profession.

PART FOURTH.—*Plastic and subcutaneous operations.*—Among the operations, spoken of under this head, Dr. P. has had considerable experience. We have not room for many remarks on this division of the work. Dr. P. has here introduced several cases and processes of his own, all of more or less interest; the most of which we believe have been already published. He might, as it appears to us, have considerably enriched his department of plastic surgery, by consulting the very valuable production of M. Serre, of Montpellier, on the Art of Correcting Deformities of the Face. Had he referred to this work, we are satisfied he would have had sufficient reason to borrow not only from the text but also from the plates; and to have substituted something more feasible, as a means of supplying the loss of the lower lip, than the procedure which he has offered as his own, and which appears to be, at least in principle, little else than the revival of the rejected operation of Delpech. In reference to the lower lip, however, we may remark that, unless destroyed beyond the commissures of the mouth, there is little need of any plastic process for supplying the loss. In one instance in which we had occasion to remove the whole lip, excepting merely the commissures, as low down as the reflection of the mucous membrane toward the jaw, by extending a transverse incision at this lower level, and drawing the raw edges on either side into approximation, they united perfectly, and left the patient with a tolerably fair mouth, the commissures appearing to yield, and a sort of lower lip to be supplied, partly in this way, and partly at the expense of the stretching of the upper lip.

The parts about the face and head upon which anaplastic surgery is exercised, have multiplied considerably of late; giving surgeons opportunity to display their skill, as well as their pedantry, in the multiplication of new terms, as well as of new procedures. As to these beautifying operations, we are disposed to believe that the subjects of them are not generally left so good-looking as they are represented to be in the pictures; some allowance being usually required on account of the artist's skill in the *beau ideal*. As to the new terms, we cannot be induced to believe that *cheiloplasty*, *meloplasty*, *uranoplasty*, *posthioplasty*, *chalinoplasty*, *oscheoplasty*, &c. &c., are either more euphonous, or more generally intelligible than *lip-mending*, *cheek-mending*, *palate-mending*, *prepuce-making*, *frenum-making*, *scrotum-mending*, &c. &c.

Having now noticed such points in the work before us, as appear to be most worthy of critical observation, we have still to say a word or two as to its general character. It is neither a manual nor a thorough work of reference; yet the practical surgeon, as well as the student, will find it highly useful; going, as it does more fully than any work that has hitherto appeared in the English language, over the field of operative surgery. The omissions and deficiencies, so far as they have a practical bearing, are, after all, comparatively unimportant. The most of them, we have, perhaps, already pointed out. The work, however, has too close a resemblance to the French models to have any great claim to the character of an original production, or even of a laboured compilation; and we are disposed to believe that had Dr. Pancoast given us an honest translation of *Bourguery*, with notes and emendations, he would have done himself more credit, and rendered a more lasting and acceptable service to the profession, than he has done in preparing the work under its present form.

In due time his book must meet the jealous eye of European critics. In it they will naturally seek for, at least, a full exposition of all that America has to claim in the department of operative surgery. What must be their judgment in finding that many of these claims have been omitted, others of them erroneously attributed to Europeans; and that the work, as a whole, is little else than a reflection of their own authors, errors and omissions included.

In referring to original authorities, out of their own nation, the French are, of all the people of Europe, the least to be relied on. They not only appropriate to themselves every innovation and improvement to which they can establish the slightest shadow of a claim, but so caricature the names of foreign writers, as to leave them scarcely recognizable by the originals themselves; so that whoever habitually copies them, must sooner or later be detected, in their errors, if in nothing else. Napoleon is somewhere made to define ambition as the desire to immortalize a few letters, which, after all, the world would contrive to spell amiss. This sarcasm would never had been suggested to any one who had not been a close observer of the French.

Finally, as to Dr. Pancoast's style, we may observe that without the least pretension to elegance, it is sufficiently clear and perspicuous; and generally correct. We have detected a few such errors as the use of *lays* for *lies*, *flatlings* for *flatlong* or *flatwise*, *cornua* for *cornu*, and perhaps a few others; and a few slight errors in his descriptions, which, however, any intelligent student will readily recognize and correct. On the whole, the work in this respect, considering the evident haste in which it has been prepared, is by no means objectionable; and as to its mechanical execution, it is highly worthy of credit.

J. W.

ART. VIII.—*Traité Clinique et Pratique des Maladies des Enfants*; par MM. RILLIET et BARTHEZ, Docteurs en Médecine, &c. &c. *Tuberculizations*. Tome troisième. Paris, 1843. pp. 743.

Clinical and Practical Treatise on the Diseases of Children. Tuberculization. By MM. RILLIET and BARTHEZ. Third volume. Paris.

HAVING, in the last number of this Journal, presented an extended analysis of the two first volumes of this admirable treatise, we would at present direct the attention of our reader to the third and last volume, which well deserves a separate examination. With the exception of about one hundred and fifty pages at the end of it, which contain a short account of entozoa, and an appendix consisting of three chapters, severally devoted to some interesting and valuable remarks upon the physiological condition—a subject of much importance, and especially so in the diagnosis of the diseases of children—to an exposition of the proper method of examining sick children, illustrated by some of their own cases arranged in a tabular form, and to some practical advice with respect to the administration of medicines to children—all of which are well worthy of careful perusal,—this volume is occupied with the subject of tuberculization, that dreadful scourge of the human race, so peculiarly destructive in the earlier years of life, and to which, as

occurring among children, special attention has only within a recent period been given.

In their preliminary remarks, MM. Rilliet and Barthez define tuberculization to be the deposit of tuberculous matter in an organ; to the consumption which succeeds this, in whatever organ it may take place, they extend the name of tubercular phthisis, instead of restricting it to the pulmonary form; to the inflammation which precedes or is the consequence of it, they give the name of tuberculous inflammation. They maintain, and rightly, as we think, that "the great majority of the scrofulous are affected with tubercles, in different quantities, in the external or internal organs, and, most generally, in both at a time. * * Besides, when a lesion called scrofulous, does not coincide with tubercles, it would be necessary to prove that it really is scrofulous, which no one has been able to do," and that, therefore, it would be better to abolish the term scrofula entirely, and substitute for it tuberculization, which has a definite meaning, and cannot lead to misapprehension and doubt. Having thus "defined their position," they enter upon the consideration of tuberculization in general, a disease, whether acute or chronic, more common in childhood than at any other period of life. A description is first given of the principal forms of tubercles, manifesting themselves either in the acute state, as miliary tubercles and what has been called yellow infiltration, or in more elementary or earlier stages, as gray granulation, gray infiltration—which it is impossible to separate from the gray granulation—gelatiniform granulation—described by Laennec, in which description the authors think it impossible not to see an acute tuberculous pneumonia mingled with gray gelatiniform infiltration—yellow granulation and what has been called tuberculous dust (*poussière tuberculeuse*) to which as occurring in the lungs attention has been directed by M. Andral. This last consists in very small, numerous, white or yellow points, not sufficiently close together to constitute a yellow surface, but looking more as if they had been sowed through the tissue, which is almost always invaded by an acute or chronic inflammation, sometimes by gray infiltration. As it has never been met with except in organs presenting other forms of tubercle, and differs from miliary tubercles only in size, and is occasionally collected together in such a manner as to form masses, the authors conclude that its tuberculous character cannot be denied, and that, from the fact that the tissue in which it was seated exhibited either acute or chronic inflammation, or gray infiltration, there is a manifest relation between these forms of tubercle and chronic pneumonia. To the question of the relation of tubercles and especially of gray granulations with inflammation, the authors next direct their attention, after having first examined what is the state of the blood-vessels in tuberculous lungs; an examination which has led them to conclusions, differing materially from those generally received, at least as regards the semi-transparent gray granulations, in which they find or appear to do so, "that the veins and pulmonary arteries are very penetrable (by injections) whilst, on the other hand, the small bronchi are obliterated, an important fact, for, in this last respect at least, the gray tissue would seem to resemble pneumonia, in which the bronchi are also only in part permeable." Vol. iii. p. 21. They admit that this requires further evidence.

Be this as it may, the elucidation of this point is rendered more important by the answer to the question proposed by the authors in relation to

the connection between gray granulations and chronic inflammation. After discussing the opinion of M. Andral, who says that "he has followed them from the moment when they take an uniform reddish colour without increased consistence, to that in which, becoming gray, they are of a semi-cartilaginous hardness," and after presenting examples in support of their view, MM. R. and B. conclude,

"We are well aware that our descriptions are not identical with those generally given of chronic pneumonia; but in no instance have we been able to discover a tissue corresponding with those descriptions; on the other hand, we here find a number of examples of an alteration which is not gray infiltration, nor gelatiniform infiltration, nor carnification (a lesion which the authors have elsewhere described as probably chronic pneumonia), nor acute pneumonia, but of which the characters occupy a middle place between the first and the last lesions, resembling more sometimes one, sometimes the other. It is to this tissue that we give the name of chronic pneumonia, because it appears to us to have its origin evidently in an acute or subacute inflammation. We have never met with it in any but tuberculous children. It is probable, also, that gray infiltration may succeed a chronic inflammation, itself the sequel of acute inflammation: this, however, is not necessary, for the inflammation may be from the outset chronic, and the infiltration may be original, as is proved by the greater frequency of it than of chronic pneumonia." They farther conclude, "that the crude yellow tubercle only succeeds inflammation through the necessary intermedium of semi-transparent gray tuberculous matter and perhaps of the dust." Vol. iii. pp. 26, 27.

In the serous membranes, tubercles manifest less tendency to softening than in other situations, and it is a remarkable fact, which the authors have for their part observed to be invariable, that the perforation of the serous membranes resulting from the softening of tubercles is occasioned by the softening of those seated on their external surface, which also have a tendency to perforate the natural canals with which they are in contact. As regards the general distribution of tubercles in the different organs, the more nearly children approach the adult age, the more generally do we find tubercles limited to the lungs and intestines, and present the same aspect as in the adult. In younger children, we are told, tuberculization often follows different laws. Thus, at times, we find all the organs studded with small, gray granulations, which, if united in one organ, would form a considerable mass, but disseminated throughout, they do not profoundly alter any one: or instead of these, miliary tubercles of an uniform size in all the organs, constituting a larger mass than in the previous case; or, in a third set of cases, considerable quantities of yellow granulations, in several organs, causing at times a degree of disorganization which is surprising. These three forms may be partial or general, the latter most frequently partial, the others more frequently general. In effect, "as a general rule, the number of organs invaded is greater in children than in adults, and certain organs which at a more advanced age are rarely tuberculous, are considerably so at the age we are studying." Vol. iii. p. 45. "The organs which most frequently present tubercles, are also those, in general, where tubercles are most numerous. (These are, in the order of their frequency, the lungs, bronchial glands, then at a long distance the mesenteric or abdominal glands, the small intestines, &c.) The tendency manifested by the organs of children to be tuberculous simultaneously is very great." Vol. iii. p. 49.

The law which was laid down by M. Louis, that no tubercles will be

found in other organs unless they are met with in the lungs does not hold good in the case of children. Indeed, his own observations were made upon individuals over fifteen years of age. M. Papavoine had already pointed out this fact, for in fifty cases of tubercles in children, twelve presented none in the lungs. Of three hundred and twelve cases reported by MM. Rilliet and Barthez, one-sixth or forty-seven had the lungs free from this adventitious deposit. "It is quite frequent," say they, "to find phthisis exclusively thoracic, and it is not rarely exclusively abdominal. Finally, it is sometimes only encephalic and it is only as an exceptional case that we see advanced tuberculization of the abdomen and of the encephalon at the same time, and not of the chest." Vol. iii. p. 53.

An account of the general symptoms, forms, march, duration, diagnosis and complications of the tuberculous disease is followed by some remarks upon the prognosis. In answer to the question, is tuberculization curable, the authors say that its cure is very rare and entirely exceptional. They do not, however, at all call in question the possibility of it, "it being placed beyond doubt by the cicatrices of tuberculous excavations," and by cases "in which positive and undeniable signs of it have disappeared." These, however, referred to partial cases. Where it is general and acute, its curability is very doubtful; perhaps the difficulty of making a diagnosis of such instances would prevent our ascertaining a cure if such were made. Perhaps in the chronic form the prognosis is more favourable, as it is of such cases, that the cures have been reported: for themselves, however, MM. R. and B. say, "that though some tuberculous children have left the hospital, to many the disease, alleviated but not cured, was destined sooner or later to be fatal. We scarcely recollect a single case in which the cure appeared to us complete." Vol. iii. p. 85.

The causes of tuberculization next occupy attention. They believe that a predisposition to its attacks necessarily exists, that it must be congenital, and that though generally hereditary, it is not necessarily so as daily experience evinces. It may be modified during life by the circumstances in which the individual is placed, and indeed may never be called into activity. At any rate, those who assert that this predisposition may be acquired, must first prove that it did not already exist. The causes which have a tendency to render active this predisposition are inheritance—the authors believe that this cause alone may determine the development of the disease without the intervention of any other occasional cause, or at least of any which are not so obscure as to be inappreciable—anti-hygienic circumstances, among which are deterioration of the air habitually breathed, constant exposure to humidity of the atmosphere, bad and insufficient food, sedentary occupations, onanism, and, in patients situated as were those observed by the authors, prolonged residence at the hospital. The authors think, and with reason, that too much stress has been laid upon the operation of each of these separately, no one of which is indispensable, while they are evidently very efficient when acting together, producing a vitiated condition of the blood, and consequent imperfect nutrition of the system. Another set of causes which may awaken the predisposition to tubercles, is anterior diseases. The operation of these is most carefully studied in the pages before us, but as we have several times had occasion to refer to their influence when studying the diseases themselves, as variola, rubeola, &c., we will not here repeat the observations then made. "Inflammation may be a cause of tuberculization,"

say the authors; "pneumonia and entero-colitis are those phlegmasiæ which most frequently determine this disease. It appears to us, however, that their action is less frequently exerted than that of the anti-hygienic causes; besides we find that it is rather rare that alone they are sufficient to cause the appearance of tubercles; they are especially active in the cases of children which have been subjected to the action of debilitating circumstances." Vol. iii. p. 112. Whooping-cough may, under the same circumstances, terminate in the deposit of tubercles in the lungs and bronchial glands; how it acts, it is impossible to say. Typhoid fever very rarely, if ever, is a cause of this deposit. The conclusions of the authors that tuberculization is more frequently met with between the ages of six and fifteen and in the female sex, agree with those previously announced by M. Papavoine. "We remark, in conclusion," say they, "that most of the causes are debilitating, and that the others, exciting at first, are followed by the formation of tubercles in consequence of the secondary debility they induce."—Vol. iii. p. 129.

The consideration of these different points is followed by an excellent article on the treatment of general tuberculization, and especially on the best method of preventing the development of the predisposition and the outbreak of the disease. Our space will not admit of our dwelling longer upon these general considerations, and we must hasten to notice some of the more important matters connected with the occurrence of tubercles in particular organs. We commence, in the order of the book, with those of the bronchial glands.

Tuberculization of the bronchial glands, which is almost peculiar to childhood, is, at this age, both frequent and serious, and gives rise to symptoms with difficulty distinguishable from those due to pulmonary phthisis. The symptoms which characterize it are the result of the pressure they exert, in consequence of their greater or less increase of size, upon the surrounding organs.

"Thus by compressing the superior vena cava, they cause œdema of the face, dilatation of the veins of the neck, violet-colour of the face, hemorrhage into the great arachnoid cavity; from compression of the pulmonary vessels may result, hæmoptysis (which is rare among children, except from rupture of a vessel), and œdema of the lungs: when the pneumogastric nerve is compressed, there may occur changes in the tone of the cough and voice, paroxysms of cough resembling those of pertussis (rarely, however, attended with whistling inspiration or vomiting), and attacks of asthma entirely unusual among children: by pressure on the air-passages are produced intense, very persistent and, at times, peculiar toned sonorous rattles, and the circulation of the air is prevented, causing an obscurity of the respiratory murmur, which may also be due to the œdema arising from the pressure on the vessel. * * * The production of these symptoms, which are not always present, nor all at the same time, is subordinate to the position of the glands, and to their development in certain directions in preference to others."—Vol. iii. pp. 199, 200.

Besides this, by acting as conductors of sounds, either normal or anormal, within the chest, these glands thus enlarged may lead to errors of diagnosis in respect to the diseases which may be actually existing in the chest. As to the causes of this form of disease, the authors have not observed that any of those mentioned, when speaking of tuberculization generally, are particularly liable to produce it. They have found the glands, in the centre of which the tubercles were seated, with evidences of acute inflammation, but this was unquestionably secondary: at other times,

they have seen "besides these deposits, a firm, almost semi-transparent, gray tissue, generally looked upon as a chronic engorgement, and which is, in reality, either a chronic inflammation, or gray infiltration," preceding ordinarily the yellow tubercle. Farther than this, the investigations of the authors have not extended, so as to be able to pronounce upon the connection between these appearances in the glands and their inflammation.

The next chapter is devoted to the consideration of tubercles in the lungs, which are studied most carefully, as their importance fully warrants. We can only present, however, a few of the points upon which much stress is laid, and which are illustrative of the peculiarities of the disease as witnessed in childhood. All the forms of tuberculous matter may be developed in the lungs. Gray granulations are met with frequently in tuberculous lungs, as often on one as on the other side, more generally in the upper than in the lower lobe, usually in considerable quantities, sometimes without the presence of any other form, very rarely so, however, in one lung alone, when the other is entirely free from tuberculous matter of any kind. Gray infiltration, which is rarer than the granulations, increases in frequency with the age of the children, from one in fourteen cases, between one and two and a half years, to one in three or four, between eleven and fifteen years. It is more abundant in the upper lobes, and sometimes exclusively confined to them, rarely, however, invading a whole lobe. In this form of the disease, the large bronchi, even to the third and fourth divisions, present very often an intense inflammation, accompanied sometimes with partial dilatations, so as to resemble a collection of little cavities in the midst of the gray infiltration. We have already had occasion to notice the authors' opinions in reference to what they consider chronic pneumonia. Tuberculous dust, (*poussière*), of which a few examples have been collected, in two of which it was the only kind present in the lungs, is met with in the midst of the gray infiltration, and of acute and chronic pneumonia. It is much more frequent between eleven and fifteen years, occurs more usually in the upper lobes than in the others, and generally in but one at a time. Somewhat less frequent than the gray, and occurring under the same circumstances, yellow granulations are found in about one-fourth of the children with tuberculous lungs and rather more frequently between three and ten years, than at any other age. Miliary tubercles invade the lungs the most frequently of all the forms, being met with in about two-thirds of the children, chiefly between the ages of eleven and fifteen, and after that between one and two years, rather more often on the right than left side, frequently on both, and generally more abundantly in the upper than the lower lobes; in more than one-third of those which had miliary tubercles, they were the only kind. Yellow infiltration manifests itself externally by yellow plates on the surface of the lungs, extending inwards and surrounded by miliary tubercles or yellow granulation, with a tendency to unite with the tubercles of the bronchial glands, or occupies the interior of a lung, or even a whole lobe, "situated sometimes at the extremity of a dilated bronchus, of which it closes the cavity, and in which it remains naked without being softened," having made its way through from without by progressive enlargement of its dimensions, and at a later stage being softened and forming a tuberculous cavity: it is met with in about one-third of the cases of tuberculous lungs, and somewhat more frequently between the ages of one and two and a half years than at any other time. Generally, equally often deposited in the

right or left lung, it is only found in both lungs at a time in one of nine cases. "It is a singular fact that children between one and two and a half years of age present yellow infiltration in the right lung much oftener than in the left, but at all other ages oftener in the left than in the right. We shall see that an analogous difference exists with regard to caverns."—Vol. iii. p. 230.

In about half the children in whom this was observed, it was limited to the superior lobe, in a fourth to the inferior, and in the other fourth it was distributed between two or three. "Softened tubercles are encountered more frequently in the lungs than in the other organs," and generally in the interior of caverns or in the midst of considerable masses of yellow infiltration. They are much more common from eleven to fifteen, and from one to two and a half years, than during the intermediate time, and oftener occur in the right than the left lung, scarcely ever in both at a time. "The structure of caverns does not essentially differ in the adult and the child. * * * The caverns, especially in very young children often present a disposition entirely different from that which we have just described in adults. Thus a whole lobe, sometimes even a portion of the neighbouring lobes also, is entirely converted into a vast yellow infiltration, in which we behold the bronchi, the vessels, and even the parenchyma disappear. In the centre of these masses, the tuberculous matter, softened throughout a greater or less extent, and partly evacuated through the largely ulcerated bronchi, has left an anfractuous cavity lined in almost all its extent by enormous half-softened tuberculous fragments. If these are removed, a red membrane analogous to that in other caverns, is observed, raised by vessels either empty or filled with clots: elsewhere every thing has disappeared, even the pleura, which can no longer be discovered. These caverns are the result of the softening of the yellow infiltration alone, and could not be attributed to eliminatory inflammation developed in the pulmonary tissue, seeing that this no longer exists at the centre, and that at the points of the surface where it is in contact with the tuberculous matter, this last is in a crude state."—Vol. iii. p. 233.

As regards frequency, caverns are less often met with in children than in adults, "less than one-third of the children presenting them, one in three cases between one and two and a half years, less than one in five between three and five and a half, less than one in three between six and ten and a half, and less than one in two between eleven and fifteen. The frequency of tuberculous excavations in the youngest children is explained by the greater frequency of yellow infiltration at that age, and by the facility with which these large tuberculous masses soften themselves at their centre, (as shown above)."—Vol. iii. p. 235.

In the older children, the caverns, which seem to follow the same laws as those of adults, are rather more frequent on the left than the right side, in the younger, where they seem to follow the laws governing the yellow infiltration, on the right than the left; in the older, they are most frequently met with in both lungs at a time, very rarely so in the younger. They occur one half oftener in the upper than the lower lobe, in children generally, but four or five times oftener in the older, while in the younger they are relatively more frequent in the middle and inferior lobes.

Cicatrization of caverns is, we are told, perhaps more rare in childhood than at any other age, still its occurrence cannot be called in doubt, as it

is generally manifested externally, though not always, by a wrinkling of the pleura, with a more or less marked depression, as in adults.

As regards the secondary lesions, we have already noticed the bronchitis which attends the yellow infiltration. Another form is met with, where caverns exist, attacking the large bronchi, and again where there is considerable pulmonary tuberculization, formed of isolated, crude tubercles. It is often very intense here and is at times even accompanied with ulceration of the bronchial mucous membrane, "due to the severity of the inflammation or to the presence, perhaps, of that muco-purulent liquid with which the bronchi are constantly in contact."

The authors take much pains to estimate the value of the physical signs to aid in the diagnosis not only of the tuberculous affection of the lungs from other lesions of these organs, but of each form of that affection as far as it can be done with any reasonable prospect of success. They lay down clearly the results of their own experience, but do not, for one moment, attempt to conceal the difficulties which will meet the observer at each step. We cannot attempt an analysis of this interesting article nor of that which relates to the rational symptoms. Two of these which are so important in the adult lose all their value in the child, especially when very young, viz., expectoration, which is almost always absent under six or seven years, though after that it may exhibit the same important indications as in the adult, and hæmoptysis, (a form of expectoration, it is true,) which is very rare in children, almost always wanting at the commencement of the disease, and when it appears generally occurring suddenly at a late period of the attack, being then fatal.

In the chapter on tuberculization of the pleura, the authors consider tubercles of that membrane and pleurisy and pneumothorax in tuberculous individuals. Tubercles may occur either within or externally to the pleura, in the first instance causing compression of the lung, but rarely softening and never perforating the serous membrane, in the other case, giving rise to tuberculous layers, causing ulceration of the pleura, communicating freely with the bronchi through perforations of the lungs, or forming large tuberculous masses by uniting themselves with a tuberculous infiltration on the surface of the lungs and even with the tuberculous bronchial glands and the masses in the lungs at the same time. This affection rarely commences with acute symptoms, and, if it does, soon subsides into the more usual chronic, insidious form, which advances gradually but certainly and is finally fatal rather in consequence of the co-existence of general tuberculous disease or of the occurrence of some acute complication, than from any cause directly referable to the disease in the pleura.

As to pleuritic inflammation in tuberculous individuals, it was always a serious affection in the cases observed by the authors, occurring at a late period in children who were already labouring under advanced phthisis and evidently hastening their death. "Pneumothorax is not very rare among children in the course of pulmonary tuberculization. It occurs, generally, in cases in which tubercles are very numerous, but it is much more rare to meet with perforations at the level of caverns in children than in adults." They may, however, be found in these situations, or they may result from the union of glandulo-pulmonary tuberculous masses, or from the rupture of an emphysematous bulla.

Tuberculization of the pericardium is very rare, having been observed but ten times in three hundred and twelve cases, and only twice present-

ing any degree of gravity; that of the tissue of the heart itself, the authors believe to be infinitely rare.

As regards tubercles and ulcerations of the larynx, the authors observe, that whenever a child, evidently tuberculous, complains of pain in the larynx, the voice becoming rough, veiled or partly extinct, the cough being at the same time hoarse, we may almost certainly announce that it is attacked with ulcerations of the larynx, seated on the vocal cords, provided, however, that these symptoms are not accompanied with paroxysms of suffocation or that the throat is not affected with pseudo-membranous inflammation. They believe with M. Louis, that the ulcerations are caused by the irritation of the secretions from the bronchi and caverns passing over the mucous membrane of the larynx, because they occur almost exclusively in children who expectorate, because they are more numerous as the expectoration is more copious, and because the bronchi are, in these cases, gorged with a fetid, grayish liquid. The same causes give origin to ulcerations in the trachea in tuberculous cases.

Tuberculization of the peritoneum is, like that of the pleura, studied under three heads. 1st. Peritoneal tuberculization; 2d. Acute peritonitis in tuberculous individuals, whether tubercles exist in the peritoneum or not; and 3d. Chronic peritonitis in tuberculous individuals. Tubercles occurring in the cavity of the peritoneum, like those met with in the cavity of the pleura, have no tendency to perforate the serous membrane, while those external to it tend to penetrate into its cavity and also into the intestinal tube. Vomiting, a symptom frequent in acute peritonitis, is entirely absent here, while diarrhœa, more or less copious and frequent, was present in every case, though this might be accounted for by the fact that either ulceration or softening of the mucous membrane of the bowels was also observed in all.

Acute peritonitis, in tuberculous cases, generally appeared at an advanced period of the disease, hastening the death of the sufferer, and manifesting itself sometimes by evident symptoms of inflammation, at other times remaining latent. Chronic peritonitis may exist independently of tubercles in the peritoneum, coinciding with tubercles in other organs and parts of the body, and giving rise to the belief of the existence of tubercles in the peritoneum.

Contrary to the generally received opinions, MM. Rilliet and Barthez state, that tuberculization of the mesenteric glands is far from being a frequent affection in the first period of childhood. "If we restrict the name of mesenteric phthisis to those cases in which the mesenteric tuberculization is considerable, only about one-seventh of all the children having tuberculous mesenteric glands will be included and only about one-sixteenth of all who present tubercles in some part of the body. If we give that name to all in which are found commencing or but slight tuberculization of the mesenteric glands, we still include one half the cases of tuberculous children, for tubercles have been found there in about that number."—Vol. iii. p. 406.

They further state that this disease "never or almost never attacks children under three years of age, that it is lighter the younger the child is, that it reaches its maximum of development between 5 and 10 years, after which it is very rare." Vol. iii. p. 322. And that the reason why it has generally been considered so frequent among children, is that other diseases, as tuberculous peritonitis, enteritis, &c., have been mistaken for it.

Of the mucous membranes, the only one in which tubercles have been

observed by MM. Rilliet and Barthez, is that of the gastro-intestinal canal. They were met with only of the miliary form, either crude or softened, commencing beneath the mucous membrane, either within or external to the muciparous glands, and resulting in ulcerations. The semi-cartilaginous granulations, said by M. Louis to be very frequent in adults, have never been seen by the authors, which is somewhat remarkable, seeing "that, elsewhere, these granulations are, in general, much more common in childhood than at any other age." The chapter on gastro-intestinal tuberculization is a very interesting one, and in it the authors show how impossible it is to distinguish the symptoms caused by these tuberculous ulcerations from those due to chronic enteritis, in which no tubercles are found, and how serious and fatal a disease it is as well from its own consequences as from the complications which are liable to attend it.

Tubercles of the liver, which are much more frequent in children than in the adult, in whom they are very rare, have been observed in the form of miliary tubercles and gray granulations in about one-fourth of all the cases, though they have been revealed during life by no special symptoms. As regards the fatty degeneration of the liver, the authors remark that it is far from being peculiar to tuberculization, it being scarcely more frequent in tuberculous children than in those who are non-tuberculous; nor is the intensity of this lesion proportioned to the extent of the tuberculization. The authors have almost exclusively met with it, when independent of tubercles, in the continued fevers, in the following order as respects frequency, variola, rubeola, typhoid fever and scarlatina. When it occurs without hypertrophy of the liver, it gives rise to no special symptoms. The youngest children are evidently most disposed to it, those with few or no tubercles more so than those which are very tuberculous, the liability to it in these last increasing with the age. Girls are more liable to it than boys when it is connected with tubercles, less so when these are absent. In the kidneys, tubercles are much more often met with among children than among adults. All forms are not equally frequent, miliary tubercles being most often observed and then gray or yellow granulations. It is much more rare to encounter large tuberculous masses or to see the kidneys reduced to the state of cyst or cavern. Nor does tuberculization of the kidneys often reach a high degree of intensity or constitute an important alteration, for when advanced, it generally coincides with an advanced state of the general disease, and in general is only an epiphenomenon upon this, having little influence upon its march and termination, and indeed, as far as we at present know, revealing itself by no especial symptoms. Nor have we any means of diagnosing tuberculization of the spleen, where the morbid deposit is very frequently and abundantly made, and in all its forms. Being ignorant of its functions and not meeting with hypertrophy of it, we are left entirely in the dark as to the symptoms occasioned by its tuberculization.

The concluding one hundred and thirty pages on tuberculization are devoted to the consideration of this lesion in connection with the nervous centres; and in them we have an admirable, perhaps unsurpassed, account of the pathological anatomy of meningo-cephalic tuberculization and of the secondary lesions of the encephalon, of the symptoms, diagnosis, causes, prognosis, march, treatment, &c., of acute hydrocephalus or tuberculous meningitis, of the history of tubercles of the brain, of the latent tuberculization and inflammation of the brain and of its membranes, and of tubercles of the bones of the cranium with the accidents they may

cause. It would be impossible to attempt, in a small space, an analysis of this chapter or even to hope to be able to present more than a sketch of the authors' views upon these important subjects.

The meningeal tubercles are always seated, with the exception of one case, as far as the authors' experience goes, externally to the arachnoid, in the meshes of the pia mater, and more frequently at the convexity than at the base of the brain. It is, indeed, rare to meet with them at the base without finding them also at the summit. The cerebral tubercles may occur primitively in the cerebral substance, and are more frequently met with in the hemispheres than in the optic couch and the central parts generally. They are about as frequent, too, in the cerebellum as in the cerebrum. The authors have no doubt of the granulations of the meninges being tuberculous. Inflammation of the meninges is a frequent affection in tuberculous individuals whether the tubercles are found in the meninges or in other parts of the system, and independently of the meninges, and presents the same characteristics in both cases. In addition to the tubercles which are generally, in these cases, found in the pia mater, the evidences of inflammation are met with, characterized by a secretion of concrete pus or of false membranes in the pia mater, which is thickened, yellowish or greenish, friable and sometimes adherent to the surface of the brain; this last presents a white, creamy softening of its central parts, occupying, in the great majority of cases, the septum lucidum, the fornix, &c., due probably to the infiltration of serosity, (which is in greater quantity than natural in the ventricles,) through the ventricular linings. At the same time there is a deposit in the other organs of tuberculous matter somewhat advanced, or which has put on an acute form. Meningitis is incomparably more frequent at the base than at the summit of the brain, and it is common to meet with it at the base alone.

In order to give a general idea of the symptoms which characterize tubercular meningitis, we will here reproduce from the authors a synoptical table which contains its prominent symptoms and those of simple meningitis, from which it is very important to diagnose it.

Tubercular Meningitis.

At the commencement headache varying in intensity, vomiting, constipation, slight acceleration of the pulse. In the great majority of cases, preservation of the intelligence.

Appearance that of a light disease.

Insidious commencement.

March rather slow, irregular, with alternations of amelioration and aggravation, diminution of the frequency, and irregularity of the pulse; nervous symptoms, varying in form, continuance and severity, agitation, in general slight, often calm delirium.

Duration rather long, rarely less than seven days, and sometimes beyond fifteen, twenty, forty days.

Simple Meningitis.

At the commencement, very intense headache, excessive agitation accompanied with screams, preceded or followed by coma or stupor, prolonged chilliness, followed by high fever, frequent, copious, bilious vomitings, with or without constipation.

Appearance that of a severe ataxic disease.

Sudden commencement of a severe acute disease.

March rapid, aggravation progressive and incessant, often persistence of the febrile movement, nervous symptoms of the same nature, except the agitation, which is *excessive*, and continues till death, agitated delirium.

Duration most generally very short, continuing then thirty-six hours, rarely prolonged beyond the fourth day.
—Vol. iii. p. 519.

The authors state they have never met with a case of tubercular meningitis terminating in a cure, a result which is in accordance with the experience of most recent observers, and which the improvements in diagnosis only tend to render more certain. Among the symptoms upon which great stress is laid in the description of this disease is the condition of the pulse; we are told by MM. R. and B. "that in a considerable number of cases of all kinds of diseases simple or complicated, acute or chronic, they have scarcely found the pulse at the same time irregular and permanently diminished in frequency except in the tuberculo-inflammatory affections of the brain and its dependences."—Vol. iii. p. 502.

Tubercles of the brain itself present so many differences in their march, relations, &c., that it is very difficult to trace a general description of them. MM. R. and B. divide their sketch, which is founded upon some thirty-four cases, twelve of their own and the others extracted from various sources, into three parts,—chronic cerebral tuberculization, commencing during good health, or perhaps with tuberculous diathesis, marked by violent and repeated convulsions, either accompanied or not with headache, vomiting, &c., and followed by muscular feebleness, paralysis, &c., death resulting either from the progress of the disease, or from some acute affection, after three or four months or longer,—chronic tuberculous hydrocephalus, which may be the consequence of the former, presenting as its first symptom, in rare cases, an increased volume of the head, more generally the nervous symptoms above noticed of chronic cerebral tuberculization, occurring almost always after the age of two years, generally between four and nine, and continuing for months—and finally cerebral tuberculization, revealing itself by acute symptoms. This is generally preceded by symptoms indicative of local or general tuberculization, commences with violent and quickly repeated convulsions, sometimes followed by profound coma soon ending in death. When this does not occur so rapidly the convulsions alternate with different cerebral symptoms, as headache, contractions, partial paralysis, strabismus, &c. Its duration is from two to thirteen days. The authors can find no relations between the seat of the tubercles and of the convulsions, though occasionally the latter are unilateral when the tubercles are so. They are inclined to attribute the convulsions, in great part, to the ventricular effusion which takes place in these cases; they state that in all the cases of contraction which they observed, a symptom almost never observed at the commencement, but persistent afterwards, the cerebral substance was softened around the tubercles. In relation to the diagnosis of the disease, we find this remark:

"We have elsewhere stated that an explorative puncture appeared to us the sole means of distinguishing arachnoidean hydrocephalus from ventricular hydrocephalus. We are the more inclined to counsel this procedure, as since the printing of our second volume, we have become acquainted with a very interesting case published by Dr. Plaisant,* in which the evacuation of a copious effusion of sanguinolent serosity into the grand arachnoidean cavity, was attended with the happiest result. The method followed by him (he makes a large incision) appears to us much more dangerous than that which we propose: and as the child was cured, this induces us to insist upon the utility of this operation."—Vol. iii. p. 567.

Latent tuberculization of the meninges and of the brain, may exist in a certain number of cases, as shown by MM. Piet and Green, with whom

* *Gazette Médicale*, April 25, 1840, p. 269.

the authors agree "that, in a certain number of cases, the meningeal granulations give rise to no symptoms, that they may or may not be accompanied with chronic inflammation, and we will add," say the authors, "with *acute inflammation*; at the same time we have seen the symptoms of the most clearly marked meningitis exist without a trace of cerebral or meningeal inflammation."—Vol. iii. p. 579.

With the exception of mournfulness, changes of character and disposition, and sometimes convulsions, which may extend back for several months, indicating the probable commencement of cerebral tuberculization, all the other symptoms, as coma, convulsions, &c., say the authors, present themselves only immediately before death, and therefore we can do nothing to arrest the disease, except by treating symptoms as they arise, and attending to the adoption of hygienic rules likely to favour an improvement in the health.

The concluding article of this chapter relates to tuberculization of the bones of the cranium, the authors referring to the admirable paper of M. Nélaton for a description of the anatomical alterations, and contenting themselves with an account of the phenomena occasioned by tubercles "developed far from the organs of the senses, or when placed in the neighbourhood of the orbital cavity, or when situated about the ethmoid bone, or finally when they are developed in the petrous portion of the temporal bone, occasioning what has been variously called chronic, or tuberculous, or cerebral otitis by authors."

Thus imperfectly have we endeavoured to present to our readers some account of one of the most extraordinary works of the modern French school, whether we look at the patience and persevering industry with which the authors laboured to collect the materials and to reduce them to order, at the mass of incontrovertible facts which they have analyzed and recorded, or at the important, and, in many instances, entirely unexpected results, which flowed from them and which the authors have never hesitated to express, giving, at the same time, the means of correcting their assertions if found conflicting with the observations of future students. We do not hesitate to say, that, taking it under every aspect, it is, without question, the most complete and truly scientific work on the diseases of children extant, and we can, therefore, well understand why it has been authorized by the Minister of Public Instruction in France, to be used as a text-book in the schools of that country. In its language it is simple, clear and unpretending, in its management, it is thoroughly scientific and free from repetition, in its matter, it is founded upon facts either the result of the authors' own experience, or which have been published or placed within their reach, by persons in whom reliance could be reposed. In addition to these characters of the book, we must bear in mind, in estimating its value, the qualities of the authors themselves; patient, untiring research, a discriminating judgment, an undeviating adherence to their principle of stating facts alone and leaving theories to take care of themselves, and—to judge from the historical accounts of the diseases which they present—a thorough knowledge of the writings of Europeans, and, in many instances, of our own authors upon the diseases under consideration—qualities which eminently fitted them for the task they have so worthily executed and which lead us to hope that they may be spared to fulfil the promise they have given of continuing their labours in the same direction.

C. R. K.

BIBLIOGRAPHICAL NOTICES.

ART. I.—*Observations on Vegetable and Animal Physiology.* By WILLIAM L. WIGHT, M. D. Petersburg, Va., 1843: pp. 36, 8vo.

THE object avowed by the intelligent and ingenious author of the essay before us, is to arrange the phenomena which are invariably connected with organization, and designated by the general term, *life*. In its accomplishment, he endeavours, by what he conceives to be a cautious induction, 1st, to advance to the general principle which controls and directs the series of actions connected with the growth and nourishment of plants; and 2dly, to show that this same law, through the instrumentality of organs and agents adapted to each exigency, presides over the higher and more complicated phenomena of animal life. He very modestly confesses that the materials which he has collected, with no little toil and anxiety, are intended only as a rude scaffolding for future inquirers to build upon; and hopes they may be entitled to a place among those contributions which a distinguished writer has happily compared to the crops that are cultivated, not for the sake of the harvest, but to be ploughed into the land.

The well-educated physicians distributed through the states and extensive territories of America, whilst engaged in the arduous duties of an anxious profession, are, at the same time, the chief purveyors and missionaries of natural science, in nearly every department. From them the farmer, the manufacturer and the artisan are continually drawing rich acquisitions of knowledge, in a way so gradual as to be almost imperceptible, and hence seldom fairly appreciated.

The phenomena of life, in all its phases, have always been objects of primary study with the physician. They constitute topics of endless discussion and speculation with the student, and of profound contemplation at mature age. One inquirer, whose attention has been more exclusively concentrated upon the investigation of chemical laws and processes, sees that many of these may be found operating in the various processes of life. He therefore comes to the conclusion that *his* department of science is competent to explain most if not all of the secondary phenomena of life. Another fixes his mind upon other agencies of the most subtle kind, and concludes that without introducing the galvanic circle, either simple or modified, chemical changes cannot begin to act. It is the duty of the impartial investigator to view the claims of all parties, to seize upon the truths revealed and tested by facts, and reject all which have no better foundation than fanciful speculation.

We cannot do Dr. Wight justice without the most ample extracts from his treatise, and these we make with the more freedom since we know they will be welcome to most of our readers, and not the least so to our rural friends.

"When," says he, "a seed is deposited in the soil under favourable circumstances of moisture, heat and air, the following chemical changes have been ascertained to ensue. A portion of the oxygen gas of the atmosphere disappears, and an equal volume of carbonic acid is evolved.* The first indication of this change is the appearance of part of the germ called the plumula, which always ascends to form the stem and leaves; while the other part, the radicle, always descends to constitute the root. As soon as the first leaf has unfolded itself, an action directly the reverse of the one just mentioned takes place. Carbonic acid is now resolved into its original elements—one of them, oxygen, returned back to the atmosphere, while the other, carbon, is retained for the

* Saussure.

nutritive purposes of the plant. And this action goes on uninterruptedly day and night, until the whole of the nourishment contained in the cotyledons or seed lobes has been consumed. This fact, which seems hitherto to have escaped notice, may be proved by the following simple experiment. Let a seed, resting upon moistened cotton in a vessel of water, be allowed fully to develop its first leaf. If this leaf be now introduced under a receiver, and supplied with carbonic acid, it will be found to decompose this gas, and to evolve an equal volume of oxygen during the night as well as the day. If the other seminal leaves as they are successively unfolded, be treated in like manner, the same process will be observed to continue, by night as well as by day, until nothing but the enveloping capsule of the germ remains. It is sufficiently evident from this experiment that the office of the seed lobes is not only to furnish carbonic acid, but to assimilate its carbon, until the organs of plants are so far developed as to effect the same object. When the food treasured up in the seeds is exhausted, the further growth and nourishment of plants are maintained through the agency of exterior influences. These are the soil, the atmosphere and solar light. The soil is composed of silica or sand, alumina or clay, lime and organic, or animal and vegetable remains, in variable proportions.

"The atmosphere consists essentially of two gases, oxygen and nitrogen; but it contains also small proportions of aqueous vapour and carbonic acid. Light, when resolved into its constituent parts, was found by Sir Isaac Newton to be composed of seven different coloured rays, violet, indigo, blue, green, yellow, orange and red.

"The organs of plants being so far advanced as to act and to be reacted upon by these three exterior influences, we find that immediate recourse is had to a division of labour, to an economy of means suited to the simple structure of the plant. Thus the leaves no longer decompose carbonic acid at night, but enter upon their especial office, the absorption of oxygen gas from the atmosphere.

"During the day, carbonic acid is taken up by the roots, and transmitted to the leaves, when it is decomposed through the agency of light. When this decomposition is effected with proper activity, plants uniformly exhibit to our view the green tint in all its beautiful varieties. If, however, this chemical change takes place either too slowly or not at all, as is the case when the influence of light is diminished or withdrawn, the colours of plants become fainter and fainter, until they wholly disappear. For the discovery that oxygen gas was given off from the leaves of plants during the day, one of the most beautiful in natural philosophy, science is indebted to Dr. Priestly; and to Ingenhous, it is believed, for the first observation that light was essential to the process. So far, then, as the chemical changes which take place in the leaves of plants fall within the reach of inquiry, the ultimate object appears to be the decomposition of carbonic acid, the extrication of its oxygen, and the assimilation of its carbon, in the completion of which process the influence of light is essential. The keystone, therefore, of an inquiry of this kind, is the knowledge of the circumstances which diminish this influence, and of the means of increasing it. This knowledge can only be obtained by a diligent observation of the facts and analogies of nature, and by experiment. Nature speaks through her phenomena, and experiment is the mode of interpretation. Thus, in casting our view over almost any field of growing plants, we shall generally observe surfaces, of greater or less extent, where the natural green is tinted off, into shades intermediate between green and yellow. On inspecting these spots, we find that the cause and only cause of difference is the degree of moisture. Hence it appears that water, when habitually too abundant, is one of those circumstances, and a very general one, too, whose tendency is to diminish the chemical agency of light. The first observation that led me to attach particular interest to this fact was the striking contrast in the colour of two portions of a wheat field, the whole of which had been sown with the same variety of seed. One portion was immediately below a canal, in consequence of which the subsoil was kept constantly wet, by the oozing of its waters; the other was adjacent to, and parallel with it, a ditch only intervening. In the spring, and especially after rains of some

duration, the colour of the wheat on the portion next the canal approached very nearly the orange tint. As the season advanced and the surface became drier to a greater depth, this tint melted insensibly into the shades intermediate between green and yellow; but at no period of its growth did it attain the rich and pure green exhibited by the wheat beyond the drain. On farther observation and inquiry, this effect of water was ascertained to be a universal fact, as regards the nutritive or cultivated families of plants, and is familiar to every observant cultivator of the soil.* It is equally well known that the productiveness of plants growing in soils containing water in excessive proportion, as a constituent part, is generally less than that of those growing on higher and drier situations. Indeed, I believe it is generally conceded that lands moderately undulating, though they will not vie with the plains in point of the luxuriance, yet exceed them in the quality and value of their products. We all know how much the product of grain is diminished, even on uplands, when the seasons are unusually wet. Further, it is a matter of common observation and experience, that the atmosphere incumbent over wet soils is the source of all those affections comprehended under the generic term, 'bilious.' These are all facts, which have been verified by numerous observations and extensive experience.

"If we now question nature still farther, by carefully taking up plants growing under the different circumstances which have been described, placing them under a receiver, and supplying them with carbonic acid, the response will be, that those exhibiting their natural green decompose double the quantity of this gas, or impure air, and give off double the quantity of oxygen or pure air, compared with those of a fainter tint. The same answer will be given if single leaves be separated from their stems, placed in vessels of water, and exposed to the direct rays of the sun. More bubbles will be seen to collect on the green than on the pale leaves, and these bubbles have been proved to consist of oxygen gas. When plants of the aquatic class are submitted to experiment, they are found to give off more oxygen than the nutritive plants of dry soils.† These trials have been repeatedly made for many seasons, and the results have generally been accordant. They are, moreover, perfectly consistent with the well-known and long-established fact, that it is only in the green substance that the decomposition of carbonic acid occurs with compensating activity. It appears, then, by following the path of observation and experiment, we arrive at the important conclusion, that the productive powers of plants, and the healthfulness of the air we breathe, are connected in the relation of cause and effect, with that particular constitution of plants which disposes them to reflect one ray of a pencil of light, the green, rather than another. But perhaps a more striking and convincing illustration of the views here attempted to be sustained, is derived from the effects of lime when applied to the soil. Few now are disposed to question the general fact, that lime is signally efficacious in promoting the fertility of the soil. That it is inoperative, and even injurious, under particular circumstances, is likewise true; but this seeming contradiction occurs only when artificially applied; and hence should be ascribed to our ignorance of its precise mode of action, and consequently of the proper state in which it should be used. But it appears, also, from the observations of Mr. Ruffin, in his valuable *Essay on Calcareous Manures*, a work which will secure for its author the enviable title of a benefactor to agriculture and to mankind, that the use of lime has greatly diminished, and in many instances entirely suspended, the regular

* Whilst these observations are correct as regards the nutritive or cultivated families of plants, the converse holds true in respect of those of the aquatic classes. These are the natural inhabitants of wet soils, and are greenest where there is the greatest excess of water; that is to say, nutritive and aquatic plants affect opposite states of moisture. Hence both become pale under the same degree—a deficiency in the one case acting as an excess in the other.

† This result, connected with the circumstance that plants of both orders become pale under the same degree of moisture, affords a satisfactory explanation of the curious but well-known fact, that the bodies of marshes are healthy, whilst their borders are the reverse.

annual visitations of the ordinary autumnal diseases. These observations of Mr. Ruffin are corroborated by those of M. Purvis, who observes, 'that, amongst all the countries to which lime has carried and established fertility, there is not cited a single one where intermittent, or ague and fever prevails.' The testimony of Sir John Sinclair to the same point is equally decided. He affirms it as an established fact, that a soil full of calcareous matters never produces an unwholesome atmosphere."

Very recent investigations, made by Dr. J. W. Draper, Professor of Chemistry in the University of the city of New York, have put us in possession of much more accurate information, relative to the agency exercised by the green parts of plants, under the influence of sunlight, in decomposing carbonic acid and liberating its free oxygen. Dr. Draper has not only demonstrated that the light of the sun is the cause of the decomposition, but shows the precise rays which are the immediate agents in the operation. This he accomplished by means of a prism, the many-coloured spectrum of which he rendered motionless by the aid of a heliostat. He then fixed in the different coloured spaces, tubes filled with water impregnated with carbonic acid gas, and containing some blades of grass. Decomposition immediately ensued, and in the course of about two hours a sufficient quantity of gas was collected for examination. It was found that the tubes in the yellow, the orange and the green light, contained most gas; those in the red exhibited a much smaller quantity, whilst the tubes placed in the blue, the indigo and the violet rays, contained none at all.

The maximum of heat occurs in or beyond the red ray; the maximum of chemical action among the more refrangible colours, blue, indigo and violet; and in these spaces the decomposition of the carbonic acid fails to go on. The doctor infers, from this observation, that *it is the yellow light which is mainly active in causing leaves to decompose carbonic acid in water by the rays of the sun.*

To the result of this beautiful experiment, Dr. Draper adds another fact of great interest, namely, that the gas evolved from leaves in the process just described, appears not to be pure oxygen, but a mixture of oxygen and nitrogen in variable proportions; from 50 to 90 per cent. of oxygen being found at different times, as is shown by explosion with hydrogen gas. But although there is this great variability in the proportion of the two gases evolved, a very simple law, which directs the progress of the decomposition, may be traced. On causing leaves to decompose a known quantity of carbonic acid, the same volume of the mixed oxygen and nitrogen makes its appearance. From this it is to be inferred, that plants during this action do not only effect the fixation of carbon, as is commonly supposed, but with it they absorb a certain quantity of oxygen also. When a leaf, exposed in carbonic acid gas to the sunshine, has completed its function, it has appropriated or assimilated all the carbon, and with it a certain portion of the oxygen; the residue of the oxygen has been evolved, and with it a volume of nitrogen precisely equal in amount to the volume of oxygen appropriated by the plant.

This disappearance of oxygen and appearance of nitrogen are thus connected with each other, as necessary and equivalent phenomena. The emission of nitrogen is not to be regarded as a mere accidental result, but a regular physiological change.

The result of Dr. Draper's experiments, when summed up, demonstrates, 1st. That the light of the sun is the true cause of the decomposition of the carbonic acid gas, which takes place in vegetation, the rays of heat, and the so-called "chemical rays," not participating therein, as Graham, Johnson, and other writers on vegetable chemistry suppose. 2d. That it is the yellow light, or most luminous ray, which is mainly concerned. 3d. That leaves evolve not pure oxygen gas, but a mixture of oxygen and nitrogen in regulated proportions. 4th. That there is an extensive class of salts which is decomposed under the same circumstances, and, therefore, the phenomenon is rather to be attributed to a digestive than to a respiratory process. 5th. That this digestion is brought about in the same way as the digestion of animals, by the decay of a nitrogenized body.

A remarkable analogy, according to Dr. D.'s view, exists between the function of digestion in animals and the same function in plants. Liebig has shown how, from the transformation of the tissues of the stomach itself, food becomes acted upon, and is turned into chyle, an obscure species of fermentation brought about by the decay of nitrogenized bodies. So, in like manner, Dr. D. thinks, the dissolution of a nitrogenized body in plants brings about the assimilation of carbon. The facts he regards as indicating that the primary action of light is not upon the carbonic acid, but upon the nitrogenized ferment, the decomposition of the gas occurring as a secondary result. From this view, he thinks we may infer, that chlorophyl, the green colouring matter of leaves, is the body which, in vegetables, answers to the chyle of animals; that it is derived from the decomposed carbonic acid, through the *eremacausis* of albumen brought into the leaf, or of some compound of the elements of ammonia that passes up by the route of the ascending sap; and that the oxygen which disappears, disappears to bring about the *eremacausis* of that ferment. Under this point of view, the digestion of plants may be regarded as taking place in the following way:—There is introduced into the leaf some azotized body, formed by the aid of ammonia, that has passed through the spongioles; on this the sunlight acts, bringing about its decomposition by causing its union with oxygen; and now, if carbonic acid be present, the decomposition is propagated to its atoms; a part of the oxygen set free is expended in continuing the *eremacausis* of the ferment; the rest is evolved with an equivalent volume of nitrogen. The carbon thus set free unites at once with the elements of water, and chlorophyl results. But this chlorophyl undergoes continuous change under the action of the sun, and is as continually replaced; from it are formed gum, and finally lignin, and all the woody fibre of plants must have originally existed as chlorophyl, or passed through the green stage.

To return to Dr. Wight's treatise. The rationale of the operation of lime in promoting vegetation, has afforded a wide field for speculation and discussion. Dr. Wight has made some interesting experiments upon the subject, in the course of which he found that plants growing in rain water, in which carbonate of lime had been previously dissolved, gave off two, three, and sometimes four volumes of oxygen, to one disengaged by those growing in pure rain water; and for every volume of oxygen emitted, an equal quantity of carbonic acid disappeared from the jar containing it. "These experiments," he observes, "were frequently and carefully repeated with the other plants cultivated in this latitude, until it seemed to be fully ascertained that the influence of the carbonate of lime, in the process of vegetable nutrition, consists in increasing the action of plants upon the light—in so modifying their constitution as to dispose them to reflect, under the ordinary defects of climate and season, their natural green; and, by connecting this power with the other well-known events in the series, viz., the more active decomposition of carbonic acid, whereby more carbon, the basis of vegetable matter, is assimilated, and more oxygen returned to the atmosphere, we obtained, as is conceived, a consistent explanation of the action of lime, both in the promotion of the fertility of the soil, and in the restoration of the air to its purity.* Thus it appears that the chemical changes which take place in the leaves of plants, and upon which their health and vigour depend, as well as the purity of the incumbent atmosphere, are effected through the joint agency of a

* It is here proper to state that the atmosphere has been analyzed, and the proportion of oxygen found to be the same in all regions and at all altitudes. But that there must be some imperfection in the mode of analysis, arising from the small quantity of air submitted to test, or some other cause, is evinced by the following circumstances: First, that growing plants are known to be one source of compensation for the oxygen consumed by respiration, by combustion, and other natural operations; secondly, that this oxygen is derived from the decomposition of carbonic acid; thirdly, that it is only in the green substance that this process is conducted with sufficient activity to make full compensation; and fourthly, that the tendency of water, when constantly too abundant in the soil, is to counteract the formation of this green substance in plants of the nutritive class, or those cultivated for the use of man.

particular ray of solar light and an alkaline principle, forming an essential element in the constitution of the plant, and disposing it to reflect this particular ray. It appears, moreover, to be equally essential that the attractive power of this principle for carbonic acid should be so delicately balanced, so nicely adjusted, as to offer no opposing force to the absorbing offices of the roots and leaves, or to the decomposing agency of the solar beam. A substance endowed with this nicely balanced equipoise of affinities, nature provides in the green matter attached to the stems and leaves of plants; and, however well suited this wonderful provision may be to excite the liveliest emotions of gratitude, love and praise, yet it should be borne in mind, that this is but one of the countless instances of beneficent adjustment inscribed upon the pages of this beautiful volume, to direct our thoughts habitually to the Source of all wisdom, and power and goodness."

In reasoning upon the results of his experiments, Dr. Wight adverts to the well-known fact, that plants are usually of a brighter green in the morning than in the evening, thus exhibiting a striking analogy between the functions of the leaves of plants, and of the lungs of animals. In the one case, he thinks the change of the blood from a darker to a brighter tint, from its union with oxygen in the lungs, is essential to the healthy activity of all the functions of the system. In like manner, he regards the conversion of the dark green of plants, arising from the accumulation of carbon, to a brighter tint, by the absorption of oxygen by the leaves at night, as essential to the activity of the decomposition of carbonic acid by day.

In the second part of his essay, Dr. Wight treats of the "*Analogies and Distinctive features of the Vegetable and Animal Kingdoms.*" The process of assimilation in plants is, according to his views, completed through the agency of an electro-chemical arrangement, consisting of carbonic acid, oxygen and light.

In animals, however, the addition of the peculiar faculties of sensation and motion, rendered a modification of this process necessary, effected through appropriate organs, fitted to make the requisite changes upon the aliment. "Thus," he observes, "the food having been completely softened and comminuted in the mouth, is conveyed to the stomach; through the agency of a peculiar secretion, the gastric juice, it is here reduced to a uniform pultaceous mass termed chyme; from the stomach the chyme passes into the duodenum, where it is acted upon by two other secretions furnished by separate organs,—the liver and the pancreas. The bile, the secretion of the former, is a greenish alkaline substance, while the pancreatic juice reddens litmus paper, thus indicating the possession of acid properties. The moment these secretions are mixed with the chyme, a striking change ensues; it separates into two distinct substances; one, a whitish fluid; the other a yellow pulp, of considerable consistence. In tracing the aliment, then, to the duodenum, we perceive a precise and remarkable correspondence between the phenomena of vegetable and animal nutrition. In each case a striking change succeeds the contact of an acid and an alkali. In plants, we know that this union is immediately followed by the decomposition of the compound; the oxygen being given off and the carbon retained."

With the view of ascertaining the exact nature of the change which takes place in animal digestion, the elements retained and those rejected, Dr. Wight reports the following experiments which he instituted and performed.

"Experiment 1st.—The knowledge of the effects of the alkalies and acids upon the sap of plants, naturally suggested a trial of their action upon the blood of animals, and with this view a small quantity of bile was added to venous blood. The only effect was an increased tendency to coagulation; following the path which nature pursues, a few drops of acid were now added, and instantly the dark Modena red of venous blood was converted into a bright vermilion. This experiment was frequently repeated, and uniformly with the same result.

"Experiment 2d.—The alkaline carbonates of lime, soda and potash were next successively mixed with venous blood. The effect of these was likewise to restore the arterial colour, though not in an equal degree, and what is deserving of especial notice, it followed without the intervention of an acid. In this respect

the effect of the alkaline carbonates resembled ordinary chemical phenomena, while that of the bile and acid seemed to be more nearly related to electrical action. The coincidence led to the following experiment.

“Experiment 3d.—A portion of gastric juice, about an ounce, was added to a saucer of milk, the quantity of bile contained in a gall-bladder was next added, and the whole intimately mixed. Into this compound the opposite wires of a voltaic pile, consisting of twelve alternations, were immersed; and, at intervals, a few drops of acid were added. In a few hours a substance similar to the white of an egg, after a little agitation, was observed to collect in the vicinity of the negative pole, and at the same time a yellowish substance, of greater consistence, gathered around the positive pole. This experiment was also frequently repeated and with an exact uniformity of result.

“When submitted to test, the white fluid exhibited a distinct alkaline reaction, and the yellow substance an equally distinct acid reaction. That the substance which collects at the positive surface contains the chyle, appears, first, from its colour, no difference having been observed between the chylons and excrementitious portion of the chyme in any part of the small intestines. Secondly, from its acid reaction. The chyle, when it reaches the thoracic duct, has a sweetish taste—a property closely connected with, if not dependent upon, the previous development of an acid. This fact is exemplified in the process of malting, and in the ripening of fruit. That the acid is mainly the carbonic, is evinced by the circumstance that carbon constitutes the substance of our food, and its union with oxygen, we have seen, is the first step towards rendering it available for nutritive or vegetative purposes. The chyle having been taken up by the lacteals, the useless residue of the chyme with the colouring matter is rejected as excrementitious. And when we consider the character of the urine it is not improbable that the white fluid or the salts are also taken up into the circulation, to be ultimately eliminated by the kidneys, when no longer of useful application.

“Experiment 4th.—On adding to venous blood the substance which had collected around the opposite wires, it was found that both of them imparted to it the colour and properties of arterial blood. This effect from the portion to which the alkalies had passed, admitted of a consistent explanation from the known action of alkalies upon the blood. But a similar effect from the other portion, or the compound of carbon and oxygen, did not accord with the action of acids, and hence militated against the conclusion that the chyle consisted essentially of carbonic acid. To ascertain whether the properties of carbonic acid differed from the others, a current of this gas was now passed through venous blood, and afterwards through arterial blood, and the result was that it heightened the colour of the former, or venous blood, but darkened the colour of the latter, or arterial blood. This effect of carbonic acid was so entirely at variance with the generally received opinion, that the experiment was frequently repeated, and with a similar result. It would hence seem that the dark colour of venous blood is derived solely from carbon.”

From the results of these experiments and other considerations, Dr. Wight thinks it apparent that, in the ultimate changes through which organic matters have to pass before they are adapted to the purposes of life, there exists an exact correspondence. The object of the preparatory changes wrought upon animal and vegetable matters in the soil, is to bring carbonic acid in contact with the roots of the plant. So, in like manner, the object of the preparatory processes accomplished through the medium of the stomach, the liver and the pancreas, appears to be to bring the same elements into contact with the lacteals or internal roots of animals. The adage of Hippocrates, “*Quemadmodum terra arboribus ita animalibus ventriculis.*” he thinks should read, “As the soil is to plants, so is the stomach, the liver and the pancreas to animals.”

In considering the complex organization of the animal system, Dr. W. contends that, the lungs have been improperly classed by Bichat among the vital organs, which are invariably single, whilst the lungs are invariably double. Thus, there is one stomach, one liver, one pancreatic gland, one spleen, &c., to preside over which there is one nerve, the ganglionic or great sympathetic. Of

the animal organs we find two of sight, two of hearing, two of locomotion, &c., all supplied with two distinct systems of nerves, one of sensation, and another of motion.

In considering the changes which the blood undergoes, and especially those effected through the pulmonary circulation, Dr. W. draws the inference that the oxygen of the atmosphere effects a similar modification of the properties of the blood on the lungs of animals, as it does on those of the sap in the leaves of plants. The propriety of this inference, he thinks confirmed by experiment. For if either of the alkalies or alkaline carbonates be added to venous blood, they immediately impart to it the character and properties of arterial blood. On the contrary, if any of the acids, except carbonic acid, be used, their action will be attended with an opposite result.

"If," says he, "the question be asked, why oxygen in combination with carbon should exert a somewhat similar influence on the colour of the blood, and yet impart to it such opposite properties? the answer is, that the compounds of oxygen are frequently alkaline as well as acid, and whether they possess the one or the other of these properties can only be deduced from experiment. Thus carbon and oxygen, in the form of carbonic acid, redden, or rather heighten, vegetable colours; whereas, the compound formed in the leaves at night changes the bluish tint, resulting from the assimilation of carbon, to a pure green, exhibiting in this instance the properties of an alkali. In like manner carbonic acid imparts to venous blood a pale red colour, whilst the compound formed in the lungs with the carbon with which the venous blood coming from the general system is charged, gives to it a pure red, or the true arterial colour, a property peculiar to the alkalies; that is to say, the shades of red in the blood arising from the acid and alkaline compounds of oxygen and carbon, are as distinct as the shades of green in plants produced by similar compounds. The analogy, therefore, between the changes effected in the sap of plants and in the blood of animals, by different proportions of oxygen and carbon, seems to be complete."

Dr. W. deems it as directly and positively demonstrated by experiment, that the elements composing the sap of plants are in different electrical states. That the elements composing the blood of animals are also in dissimilar electrical states, he also thinks evinced by the fact, that when the blood returns from the lungs to the heart, and leaves the latter organ, it has been observed to be under the influence of a double force of attraction and repulsion, phenomena which can only be referred to the attractive power exerted between bodies in different states of excitement. On reaching the capillaries, when the vital phenomena are completed, and not before, these signs of excitement subside. That is, at the moment of contact, the equilibrium of the component elements of the blood is disturbed, but only for a moment, the alkali becoming positively and the acid negatively electrical.

"A question of deep interest arises. By what influence is the equilibrium again disturbed? Through what agency are the elements of the compound disunited? We know that they must be separated, since incessant change is one of the leading characteristics of life. We know, moreover, that decomposition does ensue, since, when examined with a microscope, the blood in the capillaries has been compared to a "whirlpool from which particles were constantly detached, to unite with the different solids, whilst others were separated from the solids to be thrown back into the vortex of the circulation." The answer to this question is, that the nervous influence is the power, and the only power to which this action can be referred; and the evidence in support of this conclusion is precisely of the same character as that upon which rests the necessity of every other modification by which the animal is distinguished from the vegetable kingdom. Life is disclosed to us by acts, by a determinate series of phenomena; and the acquisition of every new fact in the science of organic nature serves but to confirm the conclusion that an identity of operation pervades the whole. The organization varies in degrees of simplicity and complexity; the ultimate object and the agents are the same. Thus, in plants, the ultimate

object to be attained, with a view to the completion of the arrangements of matter connected with their growth and nutrition, seems to be the co-existence and relative adjustment of three influences, viz.: an acid, an alkali and solar light, and as their organs are placed exteriorly, there is nothing to intercept the united action of these influences.

"In animals, the co-existence of two of these identical forces, an acid and an alkali, may be recognized, but from their position in the interior of the living body, they are inaccessible to the third influence essential to the completion of the circle in plants, viz.: light: under these circumstances, a nervous apparatus is interposed and adjusted to each exigency, increasing in complexity as we ascend the scale of being, and becoming more simple as we descend. How then can we, in view of the simplicity and constancy of nature's laws, and of the invariable path she pursues in all other instances, when a particular purpose is to be attained, look upon nervous influence otherwise than as a modification of the same general or fundamental power which comprehends the phenomena of light, galvanism and electricity.

"Farther, the organs are merely the instruments of life; they are not the agents by which its phenomena are manifested. These agents are the blood and the nervous influence, and that such is their character, is evinced by the correspondences in the structure of the heart and brain, and the part the sanguineous and the nervous systems perform in combining the several parts of the organization into one efficient and harmonious whole.

"Finally. It is known that nervous influence plays an essential part in the process of digestion, and we have seen that there are striking points of resemblance between the changes which may be produced in the same elements out of the body by electro-chemical agency, and those which are affected in the duodenum. Now the proper way of inquiring after the properties of things, says the great Newton, is to deduce them from experiment.

"Such, then, is a brief and imperfect record of the evidences which lead to the conclusion that the identical link in the chain of causes which supports, through the instrumentality of a few organs, the simpler vital powers of plants, upholds also, through the interposition of a more complicated machinery, the higher and more recondite phenomena of animated beings. These evidences, it will be seen, are the answers which nature gives when interrogated by experiment; she speaks through her phenomena, and the only mode of correctly interpreting her language is that of experiment."

The chapter which, perhaps, affords the most legitimate subject for notice in our journal is that devoted to "electro-chemistry applied to pathology." In this, Dr. Wight endeavours to explain the causes of certain irregularities which often take place in the series of phenomena connected with animal life, and which lead to derangement of healthy action.

In entering upon this part of his subject, he remarks, that although the principle of electricity is made manifest in bodies by friction, by contact of different substances, as of metals, of acids and alkalies and their subsequent separation, still the experiments of Dr. Wollaston lead to the conclusion that oxidation is the primary cause of its development. The opinion of Sir Humphry Davy was, that action of the pile commenced with the contact, but was sustained by the chemical changes. Dr. W. thinks that as vital activity is known to be most energetic in the lungs, and as the current sets from the lungs, these organs may be regarded as sustaining the same relation to the vital organs that zinc does to copper in the ordinary circle.

"The oxygen of the atmosphere composes about one-fifth of the whole, and so accurately is this proportion maintained as to form one of the greatest of wonders where all is wonderful. It is the exact proportion adapted to the excitation of health. If it be increased, there will be undue excitement of the vital force. If it be diminished, the consequence will be a diminution of the actions of life below the natural standard.

"By referring now to the article on vegetation, it will be seen to have been experimentally ascertained that malaria, or the source of those affections com-

prehended under the generic term bilious, consists in a diminution of the relative proportion of the oxygen of the atmosphere. It is evident, therefore, if an individual breathes an atmosphere of this kind, that there will be a want of proportion between the blood to be oxidized and the amount of oxygen inspired. The result, though inappreciable at first, will sooner or later evince itself in the diminution of the whole series of actions, animal and vital. The heart refuses to propel the blood with sufficient activity to the capillaries, where the vital phenomena are completed. When the blood reaches the capillaries, the alternate action and neutralization of its elements will take place, but the oxygen or alkaline compound being deficient, that kind or degree of action is not excited in the nerves, in virtue of which they are enabled to effect a complete disunion of these elements. The nutrient particles are detached in less quantity and with less activity than is consistent with the well-being of the different organs, and the same is true of the noxious particles which should be thrown back into the vortex of the circulation. Thus the whole machinery of life becomes sooner or later clogged and embarrassed in its movements, just in the same manner as an electrical pile is checked and finally stopped by the accumulation of its opposite electricities.

"The liver, from its position, situated as it is at the very point of termination of the abdominal system of black blood, is generally the first organ, as might be expected, to manifest a variation in its healthy phenomena. The elements of the bile are not completely separated from the blood. The yellow colouring matter remains, and is thus diffused through the system, imparting its tint to the conjunctiva, the skin, and other tissues. The bile, thus modified in its properties, passes into the duodenum, where it meets with the chyme and the pancreatic juice. By contact the equilibrium of the bile and pancreatic juice is disturbed, but only for a moment, the alkali becoming positively and the acid negatively electrical. The equilibrium is no sooner restored than it is again disturbed by nervous influence, but as the action of this surface must correspond with the properties of the blood or of its products, the elements of the food will only be partially separated, less oxygen uniting with the carbon to form the chyle, and less of the colouring matter given off to promote the rejection of extraneous matters from the system.

"This state of things continuing, the proportion of carbon must increase, and thus the chyle, from being only in a dissimilar state with the compound formed in the lungs, will gradually pass into an opposite one. Hence the vitality of the animal system will be diverted towards the vital organs in virtue of the tendency of electricity to pass from a positively to a negatively excited surface. When the proximity is such that the tendency is brought into action, it is revealed by the events of the cold stage.

"If the intensity or quantity of vitality be inadequate to restore the equilibrium, we have the phenomena of congestion, a condition of which the Asiatic cholera furnishes a striking but fearful illustration.

"If, on the other hand, the conjoint operation of the animal and vital energies accomplish the intended result, it is displayed in the phenomena of reaction, or fever.

"If the reaction be continued from day to day, the proportion of oxygen required for permanent healthy excitation will soon be restored, and the organs will resume their healthy actions.

"When, however, the degree of oxidation is less than is necessary to make full compensation for the deficiency that has occurred, there will be a tendency to a recurrence of the paroxysms, constituting the various forms of intermittent fever.

"That periodicity is referable to this cause, appears from the fact that its resistance to the efforts of art corresponds with the length of the intervals, the quartan being more intractable than the tertian, and the tertian than the quotidian.

"Reaction, then, or quickened respiration, which is equivalent to a larger supply of oxygen, is the true internal *vis medicatrix naturæ*, since the more frequent or prolonged is the process, the less will be the liability to recurrence.

"If in the effort to restore the equilibrium, the vital force should not be properly apportioned, it is evident that some one or more of the organs will receive more than their natural quantity, and others less. To the state of excess, the term irritation has been applied, and though not the primitive, but a consecutive phenomenon in fevers, yet it may be regarded as the chief disturbing force in counteracting the salutary tendency of nature's operations.

"The events which have been described, are those which continue to be exhibited so long as the sum of vitality, when localized, is sufficient to produce an excitation above that of health.

"It is evident, however, that by habituated exposure to an atmosphere containing less than the usual proportion of oxygen, the balance of the sanguiferous system will be so far changed as to reduce the *vis vitæ* below the point of reaction. Under such circumstances, what do we observe? A progressive decline of the whole series of organic action, animal and vital—the mental and moral faculties become impaired—the countenance loses all colour and complexion—the muscles are deprived of their contractile power, and the slightest exertion is made with reluctance from the sense of fatigue that attends it. The remarkable disproportion between the volume of the vital and of the animal organs evinces, in a striking manner, the effects of a gradually increasing predominance of the system of black or venous blood over that of the red or arterial. It is, indeed, an approach to a state of vegetable existence. Such, then, is the order and such the succession of events in those affections designated by the term 'bilious.'"

Dr. W. applies his pathological views to explain the phenomena which characterize the scrofulous and consumptive disposition. After enumerating the more prominent features, he concludes that this disposition consists in the tendency to a predominance of the animal series of actions, with a proportional diminution of activity in the vital series. Scrofula, and derangement of the digestive organs, he regards as constituent parts of the same affection, and connected in the relation of cause and effect, the disposition being the cause, deranged digestion the effect. In connection with this last observation he remarks, "that during the period of growth all the energies of life are directed to the building up of the fabric. At this period the nutritive or vital powers have the ascendancy, and hence the aëration of the blood should correspond with the quantity of food to be assimilated. If, then, the effects of a peculiar conformation of the chest are not counterbalanced by the respiration of a very pure air, and exercise, a derangement of the digestive functions will be the predominant affection; and will display itself by all those appearances that denote arrest of development. On the other hand, under the circumstances of pure air, nutritious food and exercise, the greater activity of the vital organs at this period will hold in check the tendency to undue action on the part of the animal organs.

"As the system advances to maturity, the nearer will the two systems of organs approach to an equilibrium. Subsequently to this period the animal series of actions gains the ascendancy, and this character is preserved through the remainder of life.

"The healthy adjustment of the animal and vital series of actions being once disturbed, other changes are in progress, the tendency of which is to alter still more their modes of being. Thus the aërating surface of the lungs is constantly being lessened by the deposition of tuberculous matter, thereby increasing still more the relative excess of oxygen, while, at the same time, the total amount of this element, for the general purposes of economy, is diminished. This last mentioned result is deducible from the phenomena of hectic fever, phenomena so closely resembling those of the ordinary intermittent, as to entitle us to associate them as kindred events. Thus the symptoms of hectic fever manifest themselves, after the animal series of actions have continued in the ascendancy for a certain period. In like manner when the scale preponderates in favour of the system of black blood, we have the phenomena of the bilious intermittent."

Would it not be more consonant with the present views of physiologists to ascribe the series of phenomena which mark the scrofulous disposition,—predominance of the white tissues, &c.,—to diminished decarbonization of the

blood, rather than excess of oxygen. Common observation shows us that in persons whose lungs are obstructed by tubercles, abscesses, or any other causes tending to impede free respiration, the blood is always of that very dark hue which indicates a superabundance of carbon.

Dr. Wight refers to the deleterious effects so often charged upon the preparations of mercury, when administered to scrofulous subjects. "In view of this fact," he says, "let us examine and see what is the precise mode of action of this mineral upon the system, according to the view here attempted to be sustained. Thus, if calomel be added to venous blood, and intimately mixed with it, it will impart the qualities of arterial blood. If exposed to galvanic agency, its oxygen appears at the positive pole, and the metal at the negative. In other words, the effects of the salts of mercury, when introduced into the blood, are equivalent to an excess of oxygen in the atmosphere, and, as the tendency of every excess is to fly to the animal organs, it may readily be conceived why the specific influence of this mineral should not only exasperate the symptoms of scrofula, but bring them into action when they had not been previously manifested. Farther, the alkaline carbonates exert a similar influence upon the system, but are not followed by the excessive irritability of the animal organs which attends the gradual introduction of mercury. Why? Is it not because, in addition to oxygen, these substances yield carbon to the mass of blood, thus elevating and at the same time preserving the relative electrical states of the two systems?"

"Such, then," he proceeds, "is a brief general description of the distinguishing features of scrofula. If we now compare the carnation tint of complexion, the narrow conformation of chest, and the slender muscular frame of this constitution, with the expanded chest, the strongly developed muscular system, and the florid red tint of the tissues of another constitution, we are entitled, by the rules of a just induction, to infer that, in the latter instances, the animal and vital organs are in a state of harmonious adjustment.

"But the relations and proportions of the two systems of organs in the second and third dispositions, are brought more distinctly into view, when the results of organization are concentrated upon a single organ. If, for example, the brain be selected as the point of determination, we shall find that in the scrofulous constitution it will reveal itself with remarkable uniformity in the forms of mental aberration, epilepsy and other convulsive affections—affections denoting high excitement of the nervous, with diminished power on the part of the sanguineous system. The accuracy of this observation will strike every one who will note the relation and connection of the foregoing events.

"On the other hand, the equally invariable result of the same determination in the third disposition, will be an affection of overwhelming violence, such as apoplexy in its various forms.

"Paralysis again appears to be connected with a modification intermediate between the second and third dispositions."

In recapitulation of Dr. Wight's views, it may be stated, that he attempts to show the existence, in the animal system, of two distinct series of actions, first, the animal, and secondly, the nutritive or vegetative. Related to these two series of actions are two properties, namely, sensibility and contractility, or tonicity. Sensibility, arising from the joint influence of oxygen, or the red globules, and nervous power, corresponds with positive electricity; whilst contractility or tonicity is derived from the joint action of carbonic acid or pale globules and nervous power, and corresponds with the negative electricity. To the augmentation or diminution of one or of both these properties, he conceives, may be referred all the phenomena of deranged action.

The order and succession of events in those affections included under the general term bilious, he states as follows:

"1st. Want of proportion between the blood to be aerated and the quantity of oxygen in the atmosphere. Secondly. Diminution of the whole series of organic actions, animal and vital. Thirdly. Concentration of animal vitality

upon the vital organs, in virtue of the tendency of electricity to pass from a positively to a negatively excited surface. Fourthly. Congestion, or the various forms of reaction.

"2d. The order and succession of events in the scrofulous constitution are, First. Excess of oxygen in the atmosphere, considered relatively to the organization of the individual. Secondly. Predominance of the animal series of actions. Thirdly. Corresponding diminution of those of the nutritive or vital organs.

"3. The highest state of vitality in both systems of organs constitutes the character of the third disposition.

"To discriminate between these three dispositions and their modifications, and to apply the appropriate means for their readjustment, when disturbed, are the elevated and responsible province of the physician, and if medicine may ever be reduced to an exact science, it does appear to me it will be accomplished by the wisdom of the profession, on the principle of the electro-chemical theory. I will content myself with suggesting that the alkaline carbonates seem to be indicated, when the object is to elevate the actions of both systems to their healthy standard; whilst carbonic acid, taken into the stomach in the form of Seltzer water, appears to be the appropriate agent for allaying the tendency to undue action on the part of the animal organs.

"Such, then," he continues, "is a rude and general, though, it is hoped, intelligible sketch of electro-chemistry in its application to physiology and pathology. Whether it reconciles the various theories hitherto proposed, or accords with the established results of practice, it will be for others finally to judge. Were there, however, no other argument in its favour, the simplicity with which it explains the phenomena of health and derangement, as well as the operation of remedial agents, ought, it would seem, to entitle it to our earnest meditations. But it appears, moreover, to be deducible from a careful observation and comparison of phenomena in both kingdoms of organic nature, the process having been to commence with the simplest, and ascend by analogy and experiment to the most complex form in which life is exhibited.

"The way, therefore, to examine it, is by considering whether the experiments I propound do prove those parts of the theory to which they are applied, or by prosecuting other experiments which the theory may suggest for its examination.

"Throughout the process my greatest anxiety has been to avoid a departure from the severity of the inductive method, from a deep conviction that it is the only mode of arriving at any truth, whether natural, moral or intellectual.

"In no other way can we forward that desirable event, when, to use the figurative language of a great poet, 'Truth, though hewn like the mangled body of Osiris into a thousand pieces, and scattered to the four winds, shall be gathered together limb to limb, and moulded with every joint and member into an immortal feature of loveliness and perfection.'"

G. E.

ART. X.—*A Practical Treatise on Midwifery; exhibiting the present advanced state of the science.* By F. T. MOREAU, Officer of the Legion of Honour and of the Order of Leopold; Professor of Midwifery and of the Diseases of Women and Children in the Faculty of Medicine of Paris; Physician to the Lying-in-Hospital of Paris; Consulting Surgeon to the King; Member of the Royal Academy of Medicine, and of several learned societies. Translated from the French, by THOMAS FORREST BETTON, M. D., and edited by PAUL B. GODDARD, A. M., M. D., Lecturer on Anatomy, and Demonstrator in the University of Pennsylvania, etc. etc. With Eighty Plates, comprising numerous separate illustrations, 4to. pp. 235 of text, and 80 of letter-press explanatory of the plates. Philadelphia: Carey & Hart, 1844.

THE work of M. Moreau would be a valuable one to the student of Midwifery, were it only in consequence of the very excellent lithographic illustrations by which it is accompanied; especially those exhibiting the direction and axes of

the pelvis, its various malformations, and, by different sections, its form and dimensions; with the relative position of the several organs and subjacent parts; those presenting different views of the uterus, the fœtal circulation, the relations of the fœtal head with the superior strait in the several positions, the mechanism of natural labour in the different positions of the vertex, face and pelvic extremity, and those pointing out the manner of applying the hand and instruments in cases of artificial labour. These illustrations, which are in general one half of the size of life, and several of the full size, are all beautifully and accurately executed, and convey a perfectly clear idea of the objects represented.

But excellent and valuable as these illustrations are, they do not constitute the only recommendation of M. Moreau's treatise. The text of the author contains a full exposition of the precepts and practical rules of the obstetric art, agreeably to the views and clinical experience of the best modern accoucheurs, more especially of the continent of Europe. With some few, and these by no means important exceptions, the volume before us may be followed as a very safe guide to the theory and practice of midwifery by the student, while, on many points of a practical character, it will be consulted with much profit by the practitioner.

The treatise is divided into three parts, and these again are subdivided, each into numerous sections, chapters and articles.

The first part treats of parturition. Under this head are comprised a very minute description of the organs concerned in that process with their respective functions; an account of the abnormal states of the pelvis and of the genital organs, particularly of the uterus, and finally a description of the ovum, with its gradual development and a brief sketch of its physiology.

Each of these subjects is very ably treated, and more fully than in the generality of practical treatises, but not more so than their importance demands. To the accoucheur an intimate acquaintance with every particular connected with the structure and functions of the organs concerned in parturition, and with the changes which occur in them and in the fœtus, from the period of conception to the termination of utero-gestation, is essential to enable him properly to fulfil all the duties required of him.

The author's account of the physiology of the fœtus is the least satisfactory portion of the first section. But from the obscurity with which the whole subject is involved, and the great difficulty of arriving at positive conclusions in regard to it, little better could be done than to present, as M. Moreau has, the leading views of physiologists, the errors of which it is much easier to detect than to present others bearing more of the evidences of truth.

The second part of the treatise treats of the functions of reproduction, including menstruation, generation and pregnancy, with the signs of the latter, equivocal and sensible.

The chapter devoted to the examination of the signs of pregnancy and of their relative value, is a very able and interesting one. M. Moreau makes no mention of kiestine as an indication of pregnancy. The chapter closes with some sensible remarks on the duration of utero-gestation. Although M. Moreau considers that two hundred and seventy days is the ordinary duration of pregnancy, yet, in some cases, it may terminate somewhat within, and in others, be protracted somewhat beyond this period. He adduces a case in which it was probable that the period extended to eight hundred and twenty-eight days.

Part the third treats of the expulsion of the product of conception or labour. The author occupies ten pages with an exposition of the various classifications of labours proposed by Solayrès, Baudelocque, Gardien, Flamant, Lachapelle, Naegele and Dubois. That adopted by M. Moreau is a slight modification of M. Dubois.

A good classification of labours is certainly of some importance, as affording a powerful aid to the memory in the acquisition of obstetrical knowledge. It would be out of place here, however, to enter upon a discussion as to the principles upon which the classification should be founded. It is much to be regretted, that a general agreement upon this subject could not be entered into

among obstetrical teachers throughout the world. The adoption of a new classification, and often of one essentially dissimilar from those of all preceding writers, renders it difficult to refer to and apply to any given case, the facts and experience accumulated by the leading practitioners of different countries.

The first section of part third is devoted to a consideration of natural labours, the phenomena of which are minutely and accurately detailed, and the mechanism of labour in the several positions of the vertex, of the face, sides of the head and of the pelvic extremity, are very ably described, and with much clearness:—the clearness of the description being not a little increased by the splendid pictorial illustrations by which the text is accompanied.

The third chapter of this section treats of labours that become accidentally natural by the spontaneous evolution of the fœtus.

The fourth and concluding chapter describes the conduct of the practitioner during labour, and the course to be pursued upon the occurrence of certain anomalies in its progress. M. Moreau notices the employment of ergot in cases attended with diminution or suspension of the uterine contraction, and his remarks in regard to it are replete with sound judgment. He is no advocate for its use. "We have remarked," he states, "that the uterine contractions produced by it have a peculiar, and, as it were, pathological character: that instead of being intermittent like the normal contractions, they are continuous with periods of exacerbation; if, therefore, the contractions are permanent, they must interrupt and even suspend the utero-placental circulation, and may cause the death of the fœtus. In this case the death of the fœtus should not be attributed to any poisonous qualities of the ergot, but to a purely mechanical effect, caused by the continuous contraction of the uterus. Whatever may be the cause of death, this fact alone should induce us to use the medicine with extreme caution." "In one case we saw it excite acute, permanent, and, as it were, convulsive contractions, without the slightest advance of the head; it was subsequently necessary to deliver with the forceps a dead child, which, at the moment of the exhibition of the ergot, was full of health." The effect here mentioned is by no means a rare result of the action of ergot,—the whole uterus is thrown into violent tonic contraction and the body of the fœtus is firmly grasped by it, and in such a manner as to prevent its escape from the uterus, while, at the same time, its life is destroyed and the mother made to suffer a considerable increase of pain.

In describing the proper position of the female during labour, M. Moreau remarks, that, "in England and in the United States, where English manners and customs are observed, women are delivered in bed, resting on their left side, with their legs and thighs flexed, and their knees separated by a cushion; *there they generally refuse to allow any examination, and the accoucheur is sent for, to be, as it were, merely a spectator of a process left to nature.*" We cannot imagine the source from which the author has derived so ridiculous a statement, and we feel no little surprise that so respectable a teacher should have ventured to make it, when he could easily have satisfied himself of its falsity by a reference to the works of Dewees, Meigs and other American authorities, in which the necessity of a cautious examination, to determine the nature of the presentation and the condition and progress of labour, is as strongly insisted on as in any of the European treatises, while, by the American obstetricians generally, it is always fully carried out in practice. The translator and editor of M. Moreau's work, by allowing the misstatement to pass without contradiction, would appear to give to it their assent, which we are sure was not their intention.

The second section of part third treats of artificial labours. The author considers them under four divisions. 1st. Those accidentally artificial. 2d. Those essentially artificial, the mother and fœtus being in both cases well formed. 3d. Those essentially artificial in consequence of the malformation of the mother or fœtus, and 4th. Labours rendered artificial by anomalies.

The whole subject of artificial labour is treated in a masterly manner. The circumstances of each class of cases, rendering a resort to artificial means for the delivery of the fœtus essential to the preservation of the life of the mother, and

often of the child also, are pointed out with great clearness; while the kind of manual or instrumental assistance demanded in each case is carefully examined, and the mode of its application plainly described, the whole being illustrated by a series of lithographic plates well adapted to throw light upon the instructions given in the text.

In regard to the induction of premature labours, in the author's opinion, the only case which can justify a resort to it, would be that of a pregnancy of seven months, with a pelvis having a diameter of at least two and a half inches, or at most three inches, for then, the biparietal diameter of the head not being more than three inches, we should have the same chance as if the delivery took place at full term, through a diameter of three and a half inches. He does not think it advisable, in case of the death of the fœtus. Its provocation in chronic diseases, the danger of which is daily increased by pregnancy, and which, from their very nature, must produce death before the natural termination of gestation, seems to him unworthy of serious discussion, until general opinion is definitely settled on the value of the treatment.

From a careful study of this portion of M. Moreau's work, the student of midwifery cannot fail to acquire a very full acquaintance with the operative branch of obstetrics, so far, at least, as it can be taught in books, and with the leading rules which should govern the practitioner in determining upon the propriety of a resort to manual assistance or instruments, and upon the nature of the assistance demanded in each particular case.

The third section of part third treats of the delivery of the after-birth. The remarks of the author on this subject are sound and practical. He is no advocate for leaving the placenta to be discharged by the action of the uterus, provided no serious hemorrhage occurs, and does not consider its putrefaction within the uterine cavity to be attended with no further inconvenience than the generation of a disagreeable odour. As we consider this subject to be one of great importance, and in regard to which dangerous views are entertained by a few of our cotemporaries, we shall present the following extract from the section before us.

"It is important," M. Moreau remarks, "to determine how long it is proper to wait before proceeding to artificial delivery in cases of retained placenta. Some writers recommend four, five, six hours, or even several days. This practice is very erroneous: there may result from it either a slow, but constant hemorrhage, which will exhaust the woman, or (cause) greater difficulty for the accoucheur on account of the contraction of the os uteri. Experience has convinced us that *two hours* are sufficient to arouse nature from her state of stupor; if, after this time, the stimulants we have administered do not excite contractions, we do not hesitate to effect, without delay, artificial delivery." "The dangers of the manipulations practised on the genital organs have been exaggerated; when these dangers exist, it is because the operation has been performed by unskilful hands, and we ought not to ascribe to it that which is to be attributed to the awkwardness of the surgeon alone."

When there exists an abnormal adhesion of the placenta, "the ancients, fearing the production of contusions, lacerations, in short, of more or less dreadful accidents, from excessive manipulations of the female organs, recommended patience. They even asserted, that when the efforts of nature were incompetent to effect the expulsion of the placenta, this body is either absorbed or destroyed by putrefaction, and carried away in fragments by the lochia. Although this practice has been revived by some moderns, it cannot be *too warmly condemned*, because it exposes the woman to a series of very dangerous symptoms, and may even prove fatal. No one can have more confidence than ourselves in the resources of nature; but we also believe that, if patience is a quality necessary to the accoucheur, it has its limits." "Whenever the placenta remains in the uterus, two classes of accidents, one primary and the other secondary, may manifest themselves. To the former belongs hæmorrhage. A partial separation of the placenta taking place, the woman may lose a quantity of blood, which, without being considerable, may terminate in fatal collapse." A very striking case

of this is related by the author. "When the woman loses no blood, the placenta is gradually detached, but it becomes putrid and communicates a pestilential odour to the fluids which escape from the vulva. The presence of this corrupted mass irritates the uterus, and gives rise to those fatal attacks of metro-peritonitis, which cannot be combated by antiphlogistics, and prove fatal to the patient, or to fevers of a character not less fatal. In this case, likewise, artificial delivery alone is indicated. We should be very wrong in reposing any confidence in the various means which have been proposed," and which M. Moreau passes in review.

"Is it possible to always extract the whole of the placenta? We have constantly succeeded in so doing. Yet Smellie and Baudelocque state that they have been more than once obliged to leave a portion of it in the uterus. When such men assert a fact we are constrained to give it credence. But even were it more frequent than it appears to be, we should never neglect every precaution to remove the smallest fragment of the placenta." "We might quote several cases in which cotyledons had remained eight, ten, fifteen successive days in the uterus without exciting any morbid phenomena, and then have suddenly produced an exhausting hæmorrhage."

"Accidents of the same kind may also supervene when coagula or fragments of the membranes are allowed to remain in the uterus." "Fragments of the secundines left in the uterus do not always excite hæmorrhage. Sometimes they putrefy and escape with the lochia, or produce phenomena of inflammation and fevers of a low type."

The fourth and concluding section treats of the conduct of the accoucheur after delivery. It comprises some very sensible remarks on the management of lying-in women and of the newly-born infant.

M. Moreau directs the child to be put to the breast as soon as the mother is sufficiently rested, within a couple of hours if she is strong and healthy. This we consider, on many accounts, an excellent practice, and are pleased to find it sanctioned by so respectable an authority. The author condemns very properly the too common practice of administering purgatives, even the simplest, to a new-born infant under the plea of expelling the meconium.

Appended to the work are two articles, the first being remarks on perforation of the perineum, and on the passage of the child through this part, read at a meeting of the Royal Academy of Medicine, June 1st, 1830; the second, remarks on a case of labour rendered difficult by the presence of a tumour in the cavity of the pelvis.

Our chief object in the present short notice of M. Moreau's work has been to give our readers a general idea of its character. We should have presented a more extended analysis of the author's views and practical directions, had we not been persuaded that the volume will speedily obtain a place in the library of every obstetrician throughout the country, to which we consider its merits justly to entitle it.

D. F. C.

ART. XI.—*Lectures on the Theory and Practice of Midwifery.* Delivered in the Theatre of St. George's Hospital. By ROBERT LEE, M. D., F. R. S., Fellow of the Royal College of Physicians, London; Physician to the British Lying-in Hospital, and Lecturer on Midwifery at St. George's Hospital. Illustrated with numerous Wood Engravings. 8vo. pp. 540. Philadelphia, Barrington & Haswell, 1844.

THE lectures of Dr. Lee present a very full and able exposition of the present state of the theory and practice of midwifery. The author exhibits an intimate acquaintance with the labours of his predecessors and cotemporaries in relation to the various particulars connected with the subject of which he treats; while, from his own extensive experience, he has been enabled to test the value of the principles and practical directions taught by the leading authorities in the obstet-

ric art, and thus to give additional force to such of their precepts as are founded in truth.

The work of Dr. Lee may be received as a very safe guide in the acquisition of a knowledge of obstetrics—the attentive student cannot fail to derive from it correct views as well of the principles as of the practical details of the art.

The introductory lecture is devoted to a succinct, but, at the same time, interesting and instructive history of the obstetric art, with a short notice of the labours of its more eminent cultivators, particularly during the last century.

The second lecture presents a clear and accurate account of the bones, dimensions and diseases of the pelvis.

To this succeeds, in lectures 3 to 14 inclusive, a very masterly exposition of the anatomy and physiology of the uterus, in its unimpregnated and gravid states—of the structure and functions of the human ovum—of the gradual development of the fœtus—the nature of its circulation, and the functions of its intestines, liver and kidneys, during the latter months of pregnancy.

To these subjects a degree of attention is given far beyond what is to be found in the major part of the practical treatises on midwifery—but by no means beyond what their importance demands. Independently of their bearing upon the principles and practice of obstetrics, there are many grave questions that the practitioner is repeatedly called upon to solve, which require an intimate acquaintance with the anatomy and physiology of the uterus before and subsequent to impregnation, as well as of the structure of the ovum, its successive stages of development, and the proper functions of fœtal life.

Dr. Lee adduces the evidence derived from examinations made by himself of the ovaries in females who had died during menstruation, and from similar examinations made by Drs. Prout, Girdwood, Gendrin and Negrier, and M. M. Webster, Shaw and Cruikshank, in proof of the occasional rupture of one or more of the Graafian vesicles, and the escape of their ova during menstruation. Since the publication of Dr. Lee's lectures, MM. Raciborski and Bischoff have asserted that this takes place invariably, and that this maturation and detachment of an ovum at the menstrual period is essential to impregnation.

Some interesting hints are offered in the 14th lecture on the mode of nutrition of the fœtus. Dr. Lee believes that, in the placenta, absorption of certain nutritious substances takes place from the maternal blood; these substances are carried along with the blood of the umbilical vein to the liver, and in circulating through the latter organ are converted into an albuminous or chylous fluid, which is poured into the duodenum, there to undergo changes similar to those which are observed in adults.

The diagnostic symptoms of pregnancy are the subject of lectures 15 and 16. They are treated by the author with great judgment, and very happily illustrated by a series of cases in which pregnancy was either concealed, complicated or feigned.

The diseases of pregnant women, including extra-uterine gestation and abortion are next considered, (lectures 17 to 20 inclusive.)

The remarks of the author on the pathology of the placenta and the agency of the placental diseases in the production of abortion are particularly interesting. The brief account of these diseases given by Dr. Lee is illustrated by thirteen cases which occurred under his own observation.

Equally interesting is the notice contained in lecture 19 of the communication of scarlet fever, measles, small-pox, syphilis and other diseases to the fœtus in utero. Dropsy of the amnion is treated of in the same lecture. This forms one of the most distressing complications of the latter period of pregnancy, and has not unfrequently given rise to dangerous errors in practice. The account given of it by Dr. Lee deserves a careful perusal on the part especially of the young obstetrician.

The twentieth lecture concludes with an investigation of the ordinary duration of utero-gestation. Dr. Lee has never known, in any case in which he has induced premature labour, in consequence of distortion of the pelvis, before the end of the seventh calendar month from the last menstrual period, the child to

survive. To what extent gestation may be protracted, occasionally beyond 280 days, he finds it very difficult to determine; he would, however, suspect some great error in the calculation where the period of gestation is said to exceed 300 days.

The symptoms and treatment of natural labour are the subjects of the 21st lecture. The description and practical directions of the author under this head are particularly accurate and judicious. Every thing necessary to be done to insure the comfort of the mother and the safe delivery of the child is clearly pointed out—and the impropriety and danger of all unnecessary interference strongly insisted upon.

Dr. Lee considers it to be all important, immediately upon the delivery of the child, to make the uterus permanently contract, to detach and expel the placenta, and to prevent hemorrhage. He does not conceive it to be a matter of indifference how long the placenta is allowed to remain in the cavity of the uterus, if no hemorrhage or other serious symptom immediately occur. On whatever cause, he remarks, the retention of the placenta may depend, "*there are no cases in which it ought to be permitted to remain within the uterus beyond an hour after the birth of the child, and not so long if hemorrhage takes place.*" That there may be no misunderstanding upon this important practical point, he repeats, that he has never seen a case of retention of the placenta where any thing but mischief resulted from leaving it within the uterus *beyond an hour after the expulsion of the child.*" In this statement, Dr. Lee is borne out by perhaps the majority of the best authorities in obstetrics, though it differs very essentially from the opinions of some of our fellow practitioners in this city.

The directions of Dr. Lee for the treatment of the infant after birth are, we regret to say, loose and very imperfect. There is no good reason for administering a teaspoonful of castor oil to a new-born child to facilitate the expulsion of the meconium, nor for keeping it twelve hours from the breast, its stomach being filled in the mean time with milk and water or thin gruel. These are practices from which serious injury to the little stranger not unfrequently results.

Protracted and difficult labours are the subject of the ensuing five lectures, (22 to 26 inclusive.) The various causes by which the labour is protracted or rendered difficult are accurately described, and the management of each class of cases laid down with great judgment and clearness. The impropriety of too early interference, as well as the danger of delaying assistance for too long a period, is insisted upon, while the proper rules of practice are carefully pointed out. We recommend to all young practitioners of midwifery the excellent remarks of the author on the administration of ergot.

Dr. Lee is in favour of the induction of premature labour in cases of difficult parturition from distortion of the pelvis. In this he agrees with the majority of the British and several of the continental practitioners. By having recourse to this operation, he remarks, in the early months, even before the fifth month, the Cæsarian operation can never be necessary, except in those cases in which the condition of the pelvis has not been ascertained until the full period.

The twenty-seventh, twenty-eighth and twenty-ninth lectures are devoted to a consideration of the invention and use of instruments in protracted labours. The subject is very fully considered in all its details. Much good sense is exhibited in the author's remarks upon the circumstances under which a resort to instrumental assistance becomes proper, and the rules for the application of the forceps are full, clear and precise. In regard to the condition and period of the labour in which alone instruments are to be employed, the views of Dr. Lee accord with those of the leading obstetricians of Great Britain; they differ somewhat, however, from those held by many of the continental and American practitioners.

In the twenty-ninth lecture is presented a tabular view of 127 cases of difficult labour, in which delivery was effected by the operation of craniotomy, with the results in reference to the mother.

The causes, symptoms and treatment of preternatural labours, constitute the subject of the next three lectures, (30 to 32 inclusive.) The views and practical directions of the author under this head will be found throughout to be clear and

satisfactory, and to correspond with those of the best authorities in the obstetric art. A tabular view is given of 71 cases of shoulder and arm presentations with their results.

The management of labours complicated with uterine hemorrhage, convulsions, inversion and rupture of the uterus and vagina, and with extravasation of blood in the labia, is considered in lectures 33 to 37 inclusive.

In a tabular form, we are presented with the results of 38 cases of uterine hemorrhage from placental presentation, and of 39 cases of severe uterine hemorrhage occasioned by detachment of the placenta from the superior part of the uterus.

The remarks of the author and the facts adduced by him in relation to uterine hemorrhage after delivery, with or without retention of the placenta, are particularly interesting.

On the general subject of retained placenta, Dr. Lee again insists, as he had done in a previous lecture, on the importance of effecting the removal of the placenta by manual assistance, if it remain within the uterus one hour after the delivery of the child.

"The difficulty," he remarks, "of removing portions of placenta adhering with more than natural firmness to the uterus, or retained by contraction of the cervix, is only increased by delaying to interfere after an hour has elapsed from the delivery of the child."

"Dr. J. Ramsbotham relates 11 fatal cases of retained placenta. Sixty-six cases of retention of the placenta requiring the introduction of the hand occurred to Dr. Collins in the Dublin Lying-in Hospital; 37 from want of proper uterine action; 19 from spasmodic or irregular action; and 10 where the placenta was adherent. In 24 of the 66 there was slight hemorrhage;—6 of the women died. Dr. Churchill states that, in 259,250 cases of labour, retention of the placenta occurred 392 times, or about 1 in 661 $\frac{1}{3}$. In 186 cases, where the result to the mother is given, 36 died, or about 1 in 5."

Dr. Lee presents a tabular view of 34 cases of retention of the placenta, with their results. In 23 of these cases the females recovered, the placenta being retained for a period varying from a few hours to many days; in 11 cases death occurred, in 3 from hemorrhage, in 2 from phlebitis, in 1 from hemorrhage with inversion of the uterus, in 1 from peritonitis, in 1 from cerebral inflammation, in 1 death was preceded by all the symptoms indicative of an animal poison having been introduced into the system,—in 1 from phlebitis with pus in the lungs, and the pleura inflamed and gangrenous, and in 1 death was preceded by dyspnoea, with pain in the uterus,—after death the right lung was found to be covered with lymph and hepatized, with effusion in the pleura.

These facts teach us the importance of interfering in all cases in which the placenta is not thrown off by the natural efforts of the uterus within a short time after the delivery of the child. The doctrine we have heard inculcated by some of our friends, of waiting always for the expulsion of the placenta by the contractions of the uterus whenever no hemorrhage or other serious symptom occurs, is, to say the least of it, a dangerous one. With due precaution, the hand of the accoucheur may be introduced into the uterus and the placenta brought away without the least injury and with but little suffering to the mother.

The remaining seven lectures (38 to 44 inclusive) are devoted to the diseases of puerperal women. A very excellent account is given of the several forms of uterine inflammation, including the important subject of puerperal fever. The remarks of Dr. Lee on the phenomena, causes, nature and treatment of these important and extremely fatal affections of the puerperal state are marked by great judgment and discrimination. A tabular view is presented of the leading symptoms, treatment, results and morbid appearances of 160 cases of severe inflammation of the uterus and its appendages, which occurred to the author in London, from March, 1827, to the end of April, 1835.

An admirable account is given of the origin, symptoms and treatment of crural phlebitis, and some judicious remarks upon the character and proper management of the diseases of the brain and mammæ incident to puerperal women.

The foregoing brief analysis will enable our readers to form some opinion of the character of the work before us. It certainly presents a very valuable body of obstetrical principles and practice, laid down in a plain, intelligible manner. While they are well adapted for the instruction of the student of midwifery, the Lectures of Dr. Lee may be consulted by the young practitioner with much satisfaction and profit.

The wood engravings, by which the text is accompanied, are well executed, and communicate a very accurate idea of the subjects they are intended to illustrate.

D. F. C.

ART. XII.—*Report of the President and Board of Visitors of the Maryland Hospital, and Resident Physician's Report, for 1843.*—Baltimore, pp. 24.

It is with much pleasure that we have a demonstration of the fact, that the officers of the Maryland Hospital for the Insane, have seen fit to follow the example of those of most other institutions of the kind, in the publication of annual reports.

This, the first of a prospective series, is handsomely printed, and consists of two sections, the Report of the President and Board of Visitors, and the Report of the Resident Physician. The former contains a historical sketch of the Hospital, of which we proceed to give an abridgment.

The Maryland Hospital was established in 1797. Mr. Jeremiah Yellot, of Baltimore, having given a lot of seven acres, on condition that the State legislature should grant the necessary funds for a lunatic and general hospital, that body, in 1798, granted \$8000, to which the corporation of Baltimore and some benevolent individuals added the sum of \$18,000.

After commencing operations, the Institution fell gradually under the care of the city authorities, and in 1808, was leased to Drs. Smith and Mackenzie. By the influence of these gentlemen, the legislature, in 1811, made an additional grant of \$18,000, and in 1816 another of \$30,000, with the privilege of raising \$20,000 more by lottery. Drs. Smith and Mackenzie, from their profits and other private resources, furnished \$60,000 more, making in all, *one hundred and fifty-four thousand dollars.*

From this time, about 40 lunatics and 150 patients with general diseases were usually accommodated.

In 1827, the State asserted its claim to the Institution; took possession of it, and placed it under the government of a president and board of visitors, whose duties commenced Jan. 1st, 1834, at the expiration of the lease aforementioned. The duties of physician were now performed by Drs. George Gibson, John M'Kenzie, J. S. Cohen, Richard Sexton, Fonerden and William Fisher, and those of matron and nurses were intrusted to the Sisters of Charity. At the expiration of another year, the physicians finding the duties incompatible with the full performance of their private practice, Dr. Stokes was appointed resident physician, to serve in consultation with the president of the board. Dr. Stokes was succeeded by Dr. William Fisher, who still occupies the place. "In 1840, the board dissolved its engagement with the Sisters of Charity, having found them good and faithful nurses, but claiming more authority in the management of the patients than was deemed compatible with the rights and duties of a resident physician; whose opinions, under all circumstances, the board deemed paramount to all others." Subsequently to 1834, the number of patients increasing, it was found necessary to enlarge the hospital. This was done by a grant of \$30,000 from the State, on condition that the Institution should be exclusively devoted to the treatment of the insane, and that one-half of it should be appropriated to pauper patients, &c., from the several counties, at the price of \$100 each, per annum. The hospital will now accommodate 120 patients. "The grounds contain ten acres, handsomely laid off in gardens and pleasure walks."

From the valuable report of Dr. Fisher, we learn, that they admit into this hospital, "the insane of every age, sex, station; whatever may be the cause,

the character, the complication, the inveteracy of their mutual affections,"—that the establishment is furnished with a library and those means of recreation, amusement and manual employment, which are now considered essential to all well-regulated institutions of the kind, and that, "divine worship, on Sundays, continues to be regularly attended to." "It is believed," says Dr. F., "that ours is the only institution of the kind, in the United States, in which the service of the Episcopal Church is fully and regularly used for the benefit of the inmates." This belief is erroneous. The service mentioned has been regularly performed, for many years, in the Bloomingdale Asylum, New York.

We quote the following interesting paragraph from the report :

"Two of the inmates, of literary tastes and habits, entered into an arrangement (a few months since) for the purpose of reviewing their early studies and improving themselves in general literature. A system of rules and regulations, to be strictly observed, having been signed by each, they commenced their work with a good deal of ardour, and have persevered for three months with a constancy and zeal, worthy of all commendation, and to the disappointment of some who had predicted an early failure of their enterprise. Since they commenced, they have studied thoroughly the history of the United States, the geography of Europe and America, the most important rules in arithmetic and Murray's English grammar. On Sundays they engage in Biblical studies, with questions and commentaries. In addition to the above, they devote a portion of time regularly to music. They frequently express themselves as delighted with these pursuits; complain that the days are too short for them and have been, whilst thus employed, amongst the most cheerful and happy persons in the house.—One of them is now nearly restored; the other is much improved.

"The following remarks upon corporeal restraint receive our cordial approbation. 'After all that has been said, by some of the English writers in favour of the entire abolition of personal restraint, we still believe, that the mild measures now common to all the best institutions in this country, are less irritating and offensive to the patients; and are, therefore, more effectual in securing the object in view than the constant presence of attendants, occupied in maintaining repression by muscular force, or by any intimidating measures they may be likely to employ.'"

	Men.	Women.	Total.
Patients in the Hospital, Jan. 1, 1843,	49	31	80
Admitted during the year,	41	21	62
Whole number,	90	52	142
Discharged, recovered,	"	"	45
" not "	"	"	8
Died,	"	"	8
Remaining,	45	36	81

Of the whole number, 93 were single; 25 married; 14 widows and 8 widowers. The following table exhibits the statistics of the Institution during the last ten years:—

Year.	Admitted.	Whole No. under care.	Males.	Females.	Discharged recovered.	Discharged, not recovered.	Died.	Per ct. of recovered or discharged.	Per ct. of Death, &c. all under care.
1834	21	45	22	23	6	16	5	22.2	11.1
1835	55	73	46	27	5	25	3	15.1	4.1
1836	48	88	55	33	17	25	6	34.4	6.8
1837	64	104	57	47	22	18	10	44.0	9.6
1838	61	115	69	46	32	26	6	50.0	5.2
1839	75	126	76	50	28	27	4	47.4	3.1
1840	78	145	86	59	30	60	5	31.5	3.4
1841	95	145	89	56	49	16	7	68.5	4.8
1842	66	139	94	45	42	11	6	71.2	4.3
1843	62	142	90	52	45	8	8	73.7	5.6

Whole number under care in ten years, 649, of whom 387 were males and 262 females; whole number recovered 276, or 42·8 per cent; whole number died 60, or 9·2 per cent. There was but one death by suicide during the ten years.

It will be perceived, by an inspection of the table, that the proportion of cured has been much greater during the last few years than it had been previously.—We hope that similar success will continue to attend the efforts of our friend Dr. Fisher.

P. E.

ART. XIII.—*Report of the Board of Visitors, of the Trustees and of the Superintendent of the New Hampshire Asylum for the Insane.*—Concord, 1844, pp. 32.

FROM the Second Annual Report of Dr. Chandler, Superintendent of the New Hampshire State Asylum, we glean the following statistics:—

	Men.	Women.	Total.
Patients in the asylum, June 1st, 1843,	27	20	47
“ admitted during the year,	48	56	104
“ in the asylum during the year,	75	76	151
“ discharged during the year,	42	39	81
“ remaining, May 31, 1844,	33	37	70
Of those discharged, there were cured,	21	16	37
“ “ “ died,	2	3	5

As occurs at almost every institution, some of those discharged *not cured*, were in a fair way of recovery, and would undoubtedly have been restored had they not been prematurely removed.

Civil condition of patients when admitted.—Single, 53; married, 44; widows, 3; widowers 4.

Ages at the time of the first invasion of insanity.—Under 15 years, 2; from 15 to 20, 11; 20 to 30, 39; 30 to 40, 21; 40 to 50, 20; 50 to 60, 5; 60 to 70, 6. Of those under 15 years, three were of the ages of 5, 7 and 10, respectively.

	Men.	Women.	Total.
Whole number of patients admitted since the asylum was opened, Oct. 29th, 1842,	87	93	180
Whole number discharged,	54	56	110
Of whom were cured,	27	22	49
“ died,	2	4	6

The number of admissions has been greater during the warm season than during the cold; and Dr. Chandler believes this to be a true index to the proportionate number of people who actually become deranged during the two seasons.

Dr. C. bears the following testimony to the necessity of perseverance in the treatment of mental disorders.

“Several have recovered in this asylum, by continuing our exertions for more than six months, who, at the end of the first three months trial, had scarcely begun to amend.”

We shall extend this notice no farther than to introduce from the report the following extract, in reference to one of the causes of insanity.

“Religious perplexity and excitement will, whenever our divine aspirations are directed by bigoted and zealous men, be ranked high among the causes of this malady.

“Three cases of ‘Millerism’ and one of ‘Swedenborgianism’ have come to us this year.

“The legitimate effects of religion upon a healthy mind are serenity, confidence, cheerfulness, submission; and its ministers were sent forth by their Divine Master ‘to heal the sick, cleanse the lepers and cast out devils.’

“Fewer females than males have become insane from this cause.”

P. E.

ART. XIV. *Ueber Iritis. Sechs Bücher. Eine von der Gesellschaft für Practische Medicin zu Paris gekrönte Abhandlung von F. A. VON AMMON. Deutsche nach dem Lateinischen Originale überarbeitete Ausgabe. 8vo. pp. 120. Berlin, 1843.*

On Iritis, in six books; a Prize Essay crowned by the Society of Practical Medicine of Paris. By FREDERICK A. VON AMMON. Translated into German from the original Latin and revised.

THIS treatise contains the substance of M. Von Ammon's prize dissertation, with such additional facts, in relation to the pathology and treatment of the important disease of which it treats, as the subsequent experience and observations of the author, in a widely extended field of practice, enabled him to collect. The great object of the present publication is, he remarks, to make the German medical public better acquainted with the present state of our knowledge in relation to the different forms of iritic inflammation.

The treatise is one of very great merit, and deserves the high praise bestowed upon it by the committee to whom its examination was committed by the Society of Practical Medicine. It is evidently the production of a practitioner who has studied with care the inflammatory affections of the iris at the bed-side of the sick, and who, without overlooking the labours of others in the same field of observation, has, nevertheless, in describing the pathological characters, varieties, causes and treatment of iritis, depended chiefly upon the facts collected by himself. The work is altogether practical—rejecting with very few exceptions, every species of hypothesis; the author has confined himself to a plain exposition of his own experience, comparing it occasionally with that of other writers on the same disease—insisting strongly upon such points as he believes to be fully established, and directing attention to those upon which further and more careful investigation is demanded.

The six books into which the treatise is divided, treat, the 1st of the anatomy and physiology of the iris; the 2d of the nature, symptoms and treatment of iritis in general; the 3d, of traumatic iritis; the 4th, of serous iritis; the 5th, of parenchymatous iritis, and the 6th, of inflammation of the uvea or posterior serous covering of the iris.

M. Von Ammon has examined very minutely every particular connected with the anatomical structure and physiology of the iris, a knowledge of which is absolutely necessary to the acquisition of correct views in relation to the pathology of the several species of inflammation by which the iris may be affected.

In his account of the nature, symptoms and treatment of iritis in general, the author remarks that the course of the disease is more rapid and destructive in its results in summer, particularly when the season is marked by great heat and dryness, than it is in winter and cold weather generally; whether the same difference in the progress of the disease is observed in hot and cold climates, the author is uninformed.

The course of iritis is usually slow, and often very insidious. According to M. Von Ammon's experience, there exists, in some constitutions, a stronger predisposition to its attacks than in others, but in what this predisposition consists, he has been unable satisfactorily to make out. The disease is more frequent in men than in women,—this is, perhaps, in consequence of the former being more exposed, in various mechanical occupations, to the heat and glare of intense fires, which is to be enumerated among the most common predisposing causes of iritis. It is seldom met with in childhood and youth, but is of greater frequency during infancy.

M. Von Ammon has never known iritis to prevail epidemically. He has, however, observed many cases to occur, almost simultaneously, during the prevalence of dry, cold and northerly winds.

The disease is of frequent occurrence towards the close of exanthematous diseases—and after long-continued gouty, scrofulous, syphilitic, and intestinal complaints.

In iritis, the inflammation may occur originally in the iris and be confined exclusively to it, or to a portion of it: or the inflammation may extend to the iris from the *orbiculus ciliaris*, the inner surface of the cornea or other neighbouring portions of the eye, or it may attack the iris by metastasis from some remote organ.

The inflammation may affect the anterior or posterior layers of the iris, or it may be confined exclusively to the parenchyma of the organ; it not unfrequently attacks all these parts at the same time, or in quick succession.

The disease is subject to frequent relapses—particularly upon sudden changes of weather and towards the close of the disease. These relapses are of a very serious character, very generally causing a destruction of the organization of the iris.

The inflammation has been known to be occasionally marked by perfect intermissions.

According to M. Von Ammon, iritis from internal causes, attacks, most commonly, the left eye, and is always more severe and obstinate, and more liable to relapses than when the inflammation is seated in the right eye. "The cause of this appears to him to be, in some measure, the greater rapidity and force with which the blood is propelled into the vessels of the left eye, in consequence of the left carotid originating directly from the arch of the aorta."

The disease seldom passes from one eye to the other, and still more seldom does it affect both simultaneously. M. Von Ammon has, however, observed the first to occur in many instances, when one eye has suffered for a long time from iritis ceratitis, or other chronic affection, or from the effects of a wound or operation. In such cases there readily occurs, in both eyes, a chronic inflammation of the iris, with a disposition to the effusion of plastic lymph along its edge.

The author's commentary upon the diagnostic phenomena of iritis is particularly interesting.

The symptoms of inflamed iris are a change in the colour, lustre and position of the latter; morbid effusion upon one or other of its surfaces and into its substance; a change in the form and motions of the pupil; congestion of blood in the *circulus venosus*; redness of the conjunctiva, and more or less inflammation of the eyelids. To these symptoms may be added intolerance of light, pain and deceptive vision.

When inflamed, a clear, blue iris becomes changed to a light brown, and a brown iris to either a bright or dark red. The lustre of the iris is, at the same time, diminished, and the traces of its natural filamentous structure obscured or entirely destroyed. Its free edge acquires likewise an increased thickness, which, by degrees, extends towards the circumference.

A peculiar alteration in the iris is noticed by M. Von Ammon, which causes an apparent change in its position, and gives to the affected eye a slight degree of obliquity, not unfrequently producing actual strabismus. The alteration alluded to consists in the loss of the infundibular form of the iris—its free edge, in consequence of the accumulation of blood in its enlarged vessels, and the swelling of its parenchyma, appearing to approach nearer than in the normal state to the posterior surface of the cornea.

There is often, according to our author, an increased effusion of the aqueous humour of the eye, which becomes frequently turbid, causing a dimness and increased tension of the cornea.

The pigment of the iris is generally affected in cases of iritis, it being either too copiously or sparingly effused, or changed in character. When the pigment is deficient it produces a paleness of the iris, and considerable disturbance of vision; when too copious, the iris becomes darker and thickened; it is this which gives rise to the black specks so commonly observed upon the iris when it has been long the seat of inflammation.

The colour of the pigment itself may be changed. M. Von Ammon has observed, in cases of severe and long-continued congestion of the iris, an effusion of yellow pigment upon the middle circle of the iris, to so great an extent as to cause a projecting rim around the pupil; and in similar cases, in eyes of a brown

hue, he has seen the whole anterior surface of the iris to present an appearance as though it were strewed with a quantity of a shining powder, which gives to the eye a very peculiar aspect.

An effusion of lymph may occur upon the two surfaces of the iris and into its substance; the consequence of which is very generally an entire destruction of the structure of the organ. When the effusion takes place upon the anterior surface of the iris, it is usually in the form of minute transparent drops, either spread over the entire surface or confined to one portion of it. The lymph soon loses its transparency and forms finally a white or bluish white covering to the iris. When the effusion of lymph is more copious, it is slower in solidifying, and M. Von Ammon has often observed, when the lymph has filled the entire anterior chamber of the eye, many weeks or even months to elapse before it lost, in the slightest degree, its transparency.

On the free edge of the iris, the effused lymph forms a series of minute elevations, arranged either irregularly or in a regular order; occasionally filaments of lymph pass from the edge of the pupil or from one or other surface of the iris, uniting these parts together or to the cornea or capsule of the lens. Often the effused lymph forms a kind of net-work, differing in form and thickness in different cases; assuming, occasionally, the form of a membrane interposed between the iris and the cornea, similar to the *membrana pupillaris*.

Finally, in numerous cases, particularly when chronic iritis is combined with chronic uveitis, an effusion of lymph of a triangular shape takes place, with its base at the ciliary margin of the iris, and extending thence to the pupillar edge, its apex descending through the pupil and connecting the iris with the capsule of the lens.

"The effusion of lymph upon the uvea or between this and the capsule of the lens, as well as the effusion into the posterior chamber, causes, according to our author, almost invariably an adhesion between the posterior surface of the iris and the anterior face of the lens, to a greater or less extent. Partial adhesion can seldom be detected unless the pupil is artificially dilated, as the adhesion diminishes ordinarily its normal size. Nevertheless, occasionally, the expert eye of the physician alone or aided by a glass, can detect, with more or less certainty, the existence and extent of the adhesion by the diminished lustre, changed colour or thickening of the iris at the part corresponding with the adhesion. Complete adhesion of the iris with the lens is readily detected by the consequent immobility of the pupil and the cataract which ensues. In many cases, M. Von Ammon has seen the effusion of lymph extend itself to the ciliary ligament and choroid coat, the whole of the posterior chamber being filled with it."

The colour of the effused lymph is mostly of a bluish-white colour, though occasionally it is of a yellowish white. M. Von Ammon has often detected in it small black points.

When the effusion takes place into the substance of the iris, our author describes it as generally occurring at the ciliary and pupillary rings; seldom in the central. It gives rise to a swelling of the iris, particularly at its free edge, and towards the lesser arterial circle, and causes it to approach nearer to the posterior surface of the cornea. The effusion causes a striking change in the form, colour and appearance of the external surface of the iris; its lively and mobile character is destroyed, and it looks as though it were lifeless. The thickened and irregular condition of the iris is readily detected by the aid of a glass.

M. Von Ammon considers that those writers are in error who assert that supuration never occurs as a consequence of iritis. He has observed the formation of pus to occur more especially after wounds of the iris and cornea or of the globe of the eye, and when violent shocks have been inflicted upon the whole bulb. It is met with also frequently in cases of arthritic iritis; it seldom occurs in cases of simple iritis.

The effusion of pus may give rise to hypopyon or more rarely to an abscess of the iris, which usually bursts and discharges its contents into the anterior chamber. In cases of partial iritis, M. Von Ammon has observed abscesses to form in the parenchyma of the iris, either at its pupillary or ciliary edge, in the neigh-

bourhood of the *vasa vorticosa*. These abscesses give rise to tumours, more or less prominent, usually of a yellow colour, which may be mistaken for excrescences of the iris. The ragged edges of these abscesses, after they have burst, may be seen floating in the aqueous humour—but after a time they are absorbed. At the place where the abscess was seated, lymph is effused, of a yellow, black or white colour, from which adhesions may result, between the iris and cornea, or a permanent spot may be formed upon the iris of the same colour as the effused lymph. When of a deep black colour these spots have a very close resemblance to an abnormal pupil, and as such M. Von Ammon apprehends that they have been mistaken by some writers on the disease. He has, himself, never known an abscess of the iris to cause, as has been asserted, a perforation of the iris.

Our author has never met with a primary ulceration of the iris, and has not seen an actual ulcer to occur upon the rupture of an abscess.

“Examined with a glass, not unfrequently, in cases of iritis, vessels filled with blood are seen traversing the anterior surface of the iris. The size, course and colour of these vessels differ according to their nature and origin.”

These vessels are very minutely described by M. Von Ammon, but we have not room to notice all that he says upon this subject, and an abstract would not be interesting to our readers.

Occasionally, in a single case of iritis, the several periods of the inflammation and its various products may be observed at the same time; especially in cases in which the disease has relapsed; when it pursues a decidedly chronic course; when one part after the other becomes successively invaded; or, finally, when the inflammation is of a specific character. M. Von Ammon has, in such cases, seen, at the same time, anterior synochia from effusion of lymph, ecchymosis, abscess, hypopyon and melanosis. In these instances the disease always terminates in *iridauxesis*.

In the course of iritis the pupil undergoes various changes in its form, colour and the condition of its edge. It becomes often of an oval, oblong or angulated shape. There is, in some cases, myosis, and in others mydriasis. The first occurs in cases of simple parenchymatous inflammation, the second in cases of secondary iritis. These changes are the result of a modification in the vitality of the iris—of the altered condition of its parenchyma, and of adhesions between the uvea and capsule of the lens. M. Von Ammon is unable to say, from his own observations, whether particular changes in the form of the pupil are peculiar to either of the forms of iritis.

The rim of the pupil becomes commonly darker than in its normal state, in consequence of the pupillary edge of the iris being loaded with an undue amount of black pigment, which, being irregularly deposited, gives to the rim of the pupil an indented appearance.

The free edge of the iris becomes occasionally tucked inwards so as to form a circular fold, of one or two lines broad, around the pupil. The pupillary edge of the iris appears often, upon a close examination, to be irregular; this M. Von Ammon has observed when, in blue eyes affected with inflammatory irritation or chronic iritis, the black pigment is secreted in too small a quantity.

There occasionally appears a filamentous projection of one part of the pupillary margin, continued towards the centre of the pupil; this is connected with a partial posterior adhesion—where several of these projections exist, the pupil assumes a stellated form. Occasionally, at the point corresponding with the adhesion, a small, yellow projection is observed. In secondary iritis, when the inflammation is about to invade the iris, the pupil acquires a serrated margin, and an oblong form, which gradually augments in extent, and finally terminates in melanosis.

M. Von Ammon describes excrescences of the pupillary edge or ring of the iris as of frequent occurrence in chronic parenchymatous iritis. They are of a yellow or brown colour, and of different forms and sizes. They may be mistaken for yellow spots. There are often from five to ten of these excrescences. They give rise almost always to obliteration of the pupil, or to permanent adhesions between the iris and lens, and consequent blindness. The excrescences often

form upon the uvea, and, as they increase in size, pass through the pupil into the anterior chamber; very often, at the same time, small, triangular membranes form upon the anterior surface of the iris, their base being towards the ciliary ring, and their apex towards the pupil, through which it passes to the centre of the capsule of the lens; so that gradually, when several of these membranes form, the pupil becomes entirely obliterated—its edge being intimately united with the lens, and a secondary cataract resulting. In many cases, however, the pupil remains open, but assumes a stellated, or, more commonly, an oblong or triangular form.

In the commencement of the iritic inflammation there forms, upon the sclerótica, a red ring encircling the cornea. It is formed by an enlargement of the vessels of the sclerotic coat, which run in a direct line towards the cornea, and there present manifold ramifications, surrounding it with a pale red rim or circle. The redness increases with the inflammation of the iris, and as the vessels of the sclerótica become more enlarged. In a few cases, the vessels of the conjunctiva, which may be distinguished by their more intense redness, greater size, and superficial position, become enlarged upon the anterior surface of the globe of the eye, and augment the size and colour of the ring around the cornea. The vessels forming this ring frequently disappear abruptly at the edge of the cornea, and become of a paler colour towards the inner part of the bulb of the eye. The colour of the ring is of a dark red, and the whole outer surface of the eye has a lively red colour, even before the vessels of the sclerótica become enlarged.

The circle may result, occasionally, from congestion of the *annulus conjunctivæ*, or the *orbiculus ciliaris*. It may also depend on congestion of the *circulus iridis venosus*, when it will be seated on the portion of the sclerótica bordering the cornea, and be of a blue instead of a red colour.

Inflammation of the eyelids, and some degree of catarrh, are very common attendants upon iritis.

Throughout the disease there is aversion from light, indicated by the closure of the eyelids, and the involuntary rolling up of the cornea, whenever the eyes are momentarily opened. Pain is experienced in the affected eye to a greater or less extent—it is often very severe, and continues uninterruptedly for many days; in many cases it is much less severe. It is always most intense during the night. It is sometimes seated in the neighbourhood of the eyebrows, at other times in the cheek, deep as it were in the bone. M. Von Ammon has never met with a case of iritis unattended with pain, excepting in very apathic patients, or when the disease is of a decidedly chronic character.

In the commencement of the attack, the vision of the affected eye is more or less diminished, and may, in the progress of the disease, be entirely destroyed. In many cases, the patient sees objects as through a veil. In the few cases in which the inflammation extends from the iris to the deeper seated structure of the eye, dark specks appear to float before the eye, and other ocular spectra occur.

Such is a very general outline of M. Von Ammon's account of the more important local symptoms of iritis. In conjunction with these, there may also occur fever, pain of the head, loss of appetite, restlessness, a full, hard pulse, nausea, vomiting and constipation. All of these symptoms may be present in the same case—or some may be wanting—this will depend, in a great measure, upon the constitution of the patient, and the cause and grade of the iritis.

M. Von Ammon has entered very fully into an examination of the various results of iritis—more so than the generality of those who have treated of the disease.

Atrophy of the globe of the eye—varying in extent—is a very common consequence of iritic inflammation. Where the inflammation has given rise to an effusion of pus within the cavity of the eye, rupture of the cornea may occur, allowing the escape of the humours and collapse of the coats. This is the common mode in which complete atrophy of the eye is produced. In other cases, without rupture of the cornea, the bulk of the eye becomes diminished, the cornea of an oblong or triangular shape, and drawn on one side. A white ring is, in these cases, often observed surrounding the cornea at its juncture with the sclerótica.

A lesser diminution in the bulk of the eye is very common—it is rendered evident, when both eyes are closed, to the hand placed over the atrophied and the sound eye.

In other cases, a yellow colour, and greater density of the sclerotica are produced, while the vessels of it and of the conjunctiva are injected and often varicose. An oblong shape of the iris and cornea may result from atrophy of the ciliary circle. In other cases, there result a lighter colour and macerated appearance of the iris, and often an increased folding of its free edge. The iris may also become changed in its position. The form and motility of the pupil may be altered, and the powers of vision rendered defective. Deceptive vision is a very common result of iritis, as is, also, more or less strabismus, especially when the iritis affects both eyes, and when in one the pupil is rendered permanently smaller, or adhesions of the iris have been formed.

Atrophy and thinning of some portion of the iris are occasional consequences of iritic inflammation. These, M. Von Ammon has observed to occur most frequently in blue eyes. In such cases, the motions of the iris are impeded or destroyed—its colour is rendered paler—the pupil is diminished in size, and its rim is marked by irregularities. The black pigment is either diminished in quantity or entirely wanting—so that the pupil has an ash-gray colour. The iris is, in some cases, partially destroyed, or a perforation occurs at its central or ciliary ring. Subsequent to chronic iritis, the iris is, in some instances, observed to have an abnormal motion—floating, in the different motions of the eye, backwards and forwards, between the cornea and lens. M. Von Ammon has, in conjunction with this condition of the iris, observed, in some cases, more or less dulness or opacity of the capsule of the lens, and an abnormal motility of the lens, (*cataracta natalitis*.) The lens may become completely opaque when the inflammation extends from the iris to its capsule.

A number of other results of iritis are noticed by our author, but of unfrequent occurrence and of far less importance to those which we have merely indicated, but which, in the work before us, are examined and described with great minuteness and care.

In regard to the treatment of iritis, M. Von Ammon, after pointing out the great importance of active remedies at the very commencement of the attack, and the difficulty, even by the best-timed and most judicious course of treatment, of preventing some degree of deformity to the eye, and more or less injury to vision, remarks, that the chief remedy to be relied upon for the removal of the disease is *blood-letting*.

Upon the first day of the attack, he directs the patient, whether he be young or old, to be bled until the pain of the eye is removed; and if the pain recurs on the ensuing day, the bleeding to be repeated—and even again, until the inflammation is entirely subdued. In slight cases, the application of leeches to the mastoid process,—the flow of blood from their bites being kept up for several hours—M. Von Ammon believes will often be sufficient to remove the disease. The application of leeches to the external angle of the eye has appeared to him to be attended with injurious consequences.

After bleeding the bowels should be opened freely by the use of saline purgatives, which he prefers, in the general run of cases, to calomel and jalap, and the more drastic articles that have been recommended by some physicians.

“The patient should, at the same time, be put on a restricted diet, be kept perfectly quiet, and his eyes should be defended from the light. The affected eye should not, however, be closely bandaged, especially if there is a discharge of an acrid fluid from it.” The best plan, according to M. Von Ammon, is to suspend from the forehead over the eye a fold of linen. The sound eye should, also, be excluded from the light lest its use and movements excite irritation in the other. The eyelids he directs to be wet frequently with tepid water or milk, which he considers preferable to cold lotions.

“The diminution of the pain and aversion from light are the indications of the reduction of the inflammation,—but if, upon exposure of the eyes to the light, these symptoms are found to return in any degree, the depletory remedies are to

be at once recommenced with—or we endanger the integrity of the eye by allowing effusion to occur.”

“If the attack is of an obstinate character, or occurs in lymphatic or cachectic constitutions, some derivative may be applied between the shoulders, upon the back of the neck, or upon the arm. Those generally recommended are blisters, the mezerion bark, the tartar emetic ointment or a cautery; some are in favour even of setons.”

“I have repeatedly,” remarks M. Von Ammon, “resorted to all of these remedies, and found that such derivatives prove often in iritis, as, in fact, in many, perhaps in all, of the inflammatory affections of the eye, of little or no advantage in arresting the progress of the disease.” “They may, indeed,” he adds, “be even productive of injury by producing a degree of febrile excitement, and in this manner augmenting the inflammation of the iris.” He has observed this to take place repeatedly in scrofulous subjects.

Warm pediluvia the author considers to have a beneficial effect. But he is not in favour of general bathing in the ordinary forms of the disease—he has nevertheless occasionally seen good effects result from its use.

While he objects to most of the local applications usually recommended in cases of iritis, he admits that the external application of belladonna is often very beneficial in causing a dilatation of the pupil and thus shielding the iris from adhesions. Frictions, also, with opium or morphia, either alone or combined with calomel, he has found to allay the severe pain of the eye which generally occurs towards evening,—he has seen good effects, likewise, result from the application to the eye of narcotic herbs enclosed in a bag; and he recommends, in cases of traumatic iritis, the application to the diseased organ of linen cloths wet with cold water in which has been dissolved a portion of the extract of belladonna.—R. Ext. belladonnæ, ℞j. Solve in aq. destillat. ℥xviii. This solution is to be kept for use in a vessel placed in a basin of cold water or in ice.

When we have failed in arresting the disease before effusion has taken place, our treatment must be changed. The patient should be put upon a more nourishing diet and such remedies resorted to as have the effect of causing absorption of the effused fluids—or of diminishing the extent of disorganization liable to be produced by them.

To fulfil these important indications a great variety of internal remedies have been proposed, the principal of which are cicuta, arnica, senega, colchicum, sarsaparilla, tartar emetic, the golden sulphuret of antimony, muriate of barytes, calomel and corrosive sublimate, red precipitate, hydriodate of potass or soda, carbonate of potass or soda, turpentine and the cod’s liver oil.

These remedies are described—the one or other being employed according to the nature of the effusion, the character of the iritis, and the constitution of the patient—as being calculated to remove the remaining symptoms of inflammation, to produce an absorption of the effused matters, and to remove that particular dyscrasis which was, in some degree, the remote cause of the iritis.

“We should, nevertheless,” remarks M. Von Ammon, “be cautious in believing all the above remedies to be equally effective in every case of the disease; before resorting to either of them, the species, condition and cause of the particular case under treatment should be most carefully investigated—and especially should we beware of resorting to either of them too quickly. I have repeatedly observed that the ordinary antiphlogistics, if continued for a sufficient length of time, are far more beneficial than any other class of remedies. The depletory plan of treatment has, when properly conducted, and persevered in sufficiently long, a wonderful power in all the inflammatory affections of the iris—it should not, therefore, be lightly abandoned.”

As iritis is very liable to relapse, great care should be observed during the period of convalescence, to avoid every thing liable to renew the disease.

We have thus presented a brief but accurate outline of the observations of M. Von Ammon, in relation to the pathology and treatment of iritis in general, and would be pleased to notice the subject of the four remaining books, which treat of the several forms of iritis, their causes, symptoms and respective remedies,

but the space to which we have already extended this notice, and the number of recent publications which demand our attention, oblige us to conclude here the present article. Such of our readers as feel an interest in the affections of the eye, and are conversant with the German language, will be much gratified and instructed by a careful study of the whole work. We regret that M. Von Ammon has not thought proper to accompany the present publication with plates illustrative of the various forms and stages of the disease of which he treats; the references in the volume before us are to the plates accompanying the Leipzig edition of the original prize essay in Latin.

D. F. C.

ART. XV.—*Darstellung der Verfassung und Einrichtung der Baumwoll—Spinnerei—Fabriken in Nieder—Oesterreich: Mit besonderer Beziehung auf die Moralisch—Intellectuelle und Physische Erziehung der daselbst verwendeten Kinder und die diessfalls bestehenden gesetzlichen Vorschriften.* Von Dr. Jos. JON. KNOLZ, k. k. nied. österr. Regierungsrathe, Sanitäts—Referentem und Landes—Protomedicus. Wien. 1843. 8vo. pp. 96.

An Exposition of the Condition and Management of the Cotton Factories of Lower Austria, with particular reference to the Moral, Intellectual and Physical condition of the Children employed in them, with the existing legal provisions on this subject. By J. J. KNOLZ, M. D. Vienna, 1843.

THE influence exerted upon the health and well-being of children by the labour performed by them in cotton factories becomes an important question of public hygiene, in consequence of the vast numbers who are now employed in these establishments.

The subject has for many years attracted considerable attention in Europe, but the statements that have been heretofore made in respect to it are marked by so great a degree of discrepancy as to render it difficult to arrive at any thing like a correct conclusion.

Recently, however, the question has been more closely investigated, particularly in relation to the cotton factories of Europe, by individuals who, to all appearance, are uninfluenced by prejudice or by a misdirected philanthropy. The results of their investigations, so far as they have been made public, show that there results no injury to the health of the children who labour in establishments for the spinning and weaving of cotton goods, in consequence of their confinement or the nature of their occupations, nor any impediment to their full physical development. On the contrary, it would appear from the facts that have been adduced, that the health and bodily development of the children in cotton factories, may, by a due attention to cleanliness, ventilation and other sanitary measures, be even more effectually secured than of children of the labouring classes who are otherwise employed, and that by proper regulations, which are easily carried into execution, their mental and moral powers may be as effectually cultivated.

In the work before us, Dr. Knolz, who holds a responsible public station, has examined, with great care, the condition of the children employed in the cotton factories of *Lower Austria*, and the facts which he has adduced are in the highest degree interesting.

There are, in *Lower Austria*, thirty-seven extensive cotton factories, which have in constant operation 345,751 spindles, and give employment to 10,000 men, women and children; of whom about 2,500 are between 12 and 18 years of age. Recently, no children under twelve years of age are admitted, with a few exceptions, of children under that age, who are received from compassion in consequence of their completely destitute condition, and a limited number, say perhaps about 5 per centum of the whole number of children employed, who are permitted to work under the inspection of their parents. The age at, and the circumstances under which children may be received are regulated by law.

The larger portion of the young persons employed in these factories come into

the factory every week on Sunday evening, bringing with them their provisions for the week, which consist usually of lard, meal, bacon, bread and beans, &c. A portion of these provisions is cooked daily, for common use, by one of the females, the fuel being supplied by the owner of the factory. These young labourers lodge in separate beds, and the sexes in different apartments, within the factory. They receive their wages on Saturday afternoon and depart at four o'clock for the dwellings of their parents or relatives, with whom they spend the Sunday and all religious holidays. In winter, however, they, for the most part, remain altogether in the factory, their food being brought to them by one of their parents or relatives. Others of the children, whose parents or friends reside in the immediate vicinity of the establishment where they work, eat their meals and lodge at home; while others again are supplied with food by persons near to the factory, who derive from this their support, but who are subject to strict regulations calculated to ensure, at a moderate price, to those employed in the factory, a wholesome, nourishing diet, at a fair price.

The rooms in which the children labour are invariably lofty, well lighted, and, as far as the kind of work carried on in them will permit, kept perfectly clean. They are carefully ventilated in summer, and well and equally heated during the winter; in many establishments by steam distributed in iron tubes. Great attention—under judicious regulations, strictly enforced—is paid to the personal cleanliness of the children themselves.

They are occupied, daily, between twelve and thirteen hours, an hour and a half being allowed at noon for dinner and recreation. Three quarters of an hour of their working hours are generally unemployed every day during the putting of the machinery into full operation in the morning, and the arresting of its operation in the evening.

The labour demanded of the children requires altogether but little bodily exertion, excepting a frequent change of position, by which they are better protected from injury from accidental changes of temperature than the apprentices to many other trades. It is made by law the interest of the employer to save the children who labour in factories from any undue fatigue by which their strength and activity may be impaired.

The discipline to which they are subjected is, according to our author, mild and parental. In a large number of instances their immediate overseer is one of their parents or a near relation. The character of the people of Lower Austria is represented by Dr. Knolz as mild and affectionate—so that any thing like a severe or barbarous treatment of children, even by those who are no way related to them, is unknown among them.

The author speaks in the most decided terms of the good health and full physical development of the children who are employed in the cotton factories of Lower Austria. In fact, the legal regulations in respect to these factories would appear to be well calculated to ensure both.

Their good condition of health, Dr. Knolz remarks, must strike every beholder who observes their joyful movements and cheerful deportment as they depart, after their days' labour, from the factories.

The largest factory in this part of Europe, he adds, has been in constant operation now for nearly thirty-six years, during which period it has employed 21,600 children, all of whom left it, after their four years' service, in perfect health, and well grown for their years.

Among those employed in the factories there has never been observed a greater mortality than what occurs among the inhabitants in general of the neighbourhood in which they are located. In fact, the labourer in the factory is entirely exempt from many of the causes of disease—as heat and cold, sprains and contusions—to which the agricultural labourer is exposed; and hence it is a common observation that the children of the latter are more liable to maladies from these causes than those employed in the cotton works. During the epidemic cholera of 1832, of the twelve hundred persons employed in the extensive factory of Pottendorfer, but three fell victims to the disease.

There is no endemic disease, Dr. Knolz declares, from a long-continued series

of observations upon this subject, to which the factory hands are subject. Even when disease does attack the children employed in the factories, it is far less the result of any thing connected with the latter than of injury received in their sports during the periods of recreation. The generality of these diseases are of a gastric character, or are the result of cold.

Children employed in the factories die occasionally of scrofulous affections and consumption, the germ of which diseases they bring with them, which is shown by their parents being affected with the same—or they are the result of the neglect and misery to which, in their earlier years, they have been subjected.

An experience of many years has shown, remarks our author, that the warm atmosphere of the cotton factories, loaded with oily particles, is particularly advantageous to persons labouring under affections of the lungs; so that children and old persons so circumstanced, have withstood, in the factories, for a long time, the ravages of their complaint, and always feel most comfortable whilst in the work-room.

Children under twelve years of age, employed in the factories, attend, either in the schools attached to them, or in those of the village, during a certain number of hours daily, while those over twelve years receive, in the Sunday schools established in each institution, the necessary elementary instruction. Many factories employ a particular instructor, while others pay to one of the school-masters of the neighbourhood a certain sum, for which he devotes particular hours daily for the instruction of the children attached to them.

The children receive, on Sundays, and all church holidays, careful religious and moral instruction, either at the churches of the neighbourhood or by persons appointed for this especial purpose.

In an appendix, Dr. Knolz has presented an abstract of the various legal provisions to secure the religious, moral, intellectual and physical well-being of the children employed in the Austrian factories. They bear throughout the marks of wisdom and justice, and cannot fail, if carried strictly into effect—and we are assured that such is the case—of attaining the important ends for which they were enacted.

D. F. C.

ART. XVI.—*Untersuchungen über Periodische Vorgänge im gesunden und kranken Organismus des Menschen.* Von GEORG SCHWEIG. Karlsruhe, 1843. 8vo. pp. 168.

An Inquiry into the Periodical Movement of the Human Organism in Health and Disease. By GEORGE SCHWEIG.

THE object of the present publication is to show, that while the activity of the various organic functions of the human body varies considerably at different periods, it is very nearly the same at corresponding periods. In other words, that the organic actions observe, in their augmentation and decrease, a strictly periodical movement, and that a similar periodicity is manifested by all the organic phenomena in health and disease. The author has further attempted to discover the laws by which this periodicity is governed.

The work is divided into eight parts—the *first* of which is introductory. The *second* treats of the periodical movement of the secretion of the urinary acids. The *third* of the influence of the periodical movement upon the fatal termination of diseases. The *fourth* of the influence of the periodical movement upon menstruation. The *fifth* of the influence of the periodical movement upon the paroxysms of an epileptic; the *sixth* of the action of the *tropical period*, (the phases of the moon,) in disease. The *seventh* of the construction of the tropical period, and the *eighth* and last part contains some general considerations on the action of the periodical causes.

The inquiry undertaken by M. Schweig is one of great interest, and he has treated it with considerable ability. The large number of observations he has collected in proof as well of his general proposition as of the several minor questions involved in it, cannot fail to attract to the subject the attention of physicians.

The periodicity of nearly all the phenomena of life, during a state of health, is admitted by many of the most distinguished physiologists of the present day, and that the phenomena of disease observe a similar periodicity, is rendered probable by too many well-authenticated facts, to permit of the question being discarded without a full and cautious investigation.

The peculiar character of the subjects discussed by our author, as well as his method of treating them, will prevent us from entering into an examination of the work before us, or of attempting to lay before our readers even an analysis of its contents. To do either would demand more space than we can well spare—and any partial exposition of the statements and views of M. Schweig would do injustice to him, while it would convey but little useful information to our readers. To understand fully the bearing of the facts adduced by the author and the value of the deductions he has drawn from them, the work must be carefully studied throughout.

The laws laid down by M. Schweig as those by which the periodicity of the phenomena of health and disease is governed, are extremely plausible, but their full establishment will demand further and more extended and cautious observations.

We present the following tables from that portion of the work which treats of the influence of the periodical movement upon the mortality of diseases.

The first shows the number of deaths according to the hours of the day.

From 12 o'clock at night
to 12 at noon.

12 to 1	- 119
1 to 2	- 152
2 to 3	- 188
3 to 4	- 202
4 to 5	- 215
5 to 6	- 228
6 to 7	- 215
7 to 8	- 215
8 to 9	- 230
9 to 10	- 221
10 to 11	- 202
11 to 12	- 181

From 12 o'clock at noon
to 12 at night.

12 to 1	- 201
1 to 2	- 178
2 to 3	- 208
3 to 4	- 205
4 to 5	- 214
5 to 6	- 233
6 to 7	- 213
7 to 8	- 159
8 to 9	- 191
9 to 10	- 221
10 to 11	- 202
11 to 12	- 285

To show the hours at which the greatest and least number of deaths occur, the table may be arranged thus :

11 to 12 P. M.	285	7 to 8 A. M.	215	12 to 1 P. M.	201
5 to 6 P. M.	233	4 to 5 P. M.	214	8 to 9 P. M.	191
8 to 9 A. M.	230	6 to 7 P. M.	213	2 to 3 A. M.	188
5 to 6 A. M.	228	2 to 3 P. M.	208	11 to 12 A. M.	181
9 to 10 A. M.	221	3 to 4 P. M.	205	1 to 2 P. M.	178
9 to 10 P. M.	221	3 to 4 A. M.	202	7 to 8 P. M.	159
4 to 5 A. M.	215	10 to 11 A. M.	202	1 to 2 A. M.	152
6 to 7 A. M.	215	10 to 11 P. M.	202	12 to 1 A. M.	119

The following table shows the difference in the number of deaths during the morning and evening hours, in winter and summer.

MORNING.					
	4 to 5	5 to 6	6 to 7	7 to 8	8 to 9
Winter,	95	109	116	115	113
Summer,	120	119	99	100	117
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
	215	228	215	215	230

EVENING.						
	4 to 5	5 to 6	6 to 7	7 to 8	8 to 9	9 to 10
Winter,	103	114	81	77	105	111
Summer,	111	119	132	82	86	110
	<hr/> 214	<hr/> 233	<hr/> 213	<hr/> 159	<hr/> 191	<hr/> 221

Table of deaths from Consumption at different hours of the day.

NIGHT.					MORNING.					NOON.	
12-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12
21	27	34	32	43	30	44	29	52	37	30	26
NOON.					EVENING.					NIGHT.	
12-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12
42	31	29	27	30	36	32	20	22	31	33	42

Table of Deaths during a Synodical Period.

During the first period, in which the new moon occurs,	898	deaths took place.
“ second period,	“	953
“ third period, in which the full moon occurs,	1005	“
“ fourth period,	“	948
“ fifth period,	“	871

Table showing the influence of the anomalous course of the Moon.

Between the Apogee and Perigee of the moon	2328	deaths occurred in 2008 days.
“ Perigee and Apogee,	“ 2347	“ 2009 “

Preceding the Apogee.

5th day.	4th day.	3d day.	2d day.	1st day.	
171	162	165	161	166	825 deaths.
On the day of the Apogee,	-	-	-	-	169 “

Succeeding the Apogee.

1st day.	2d day.	3d day.	4th day.	5th day.	6th day.	
137	174	164	176	154	166	971 “
						<hr/> Total 1965

Preceding the Perigee.

5th day.	4th day.	3d day.	2d day.	1st day.	
159	198	178	168	167	870 “
On the day of the Perigee,	-	-	-	-	197 “

Succeeding the Perigee.

1st day.	2d day.	3d day.	4th day.	5th day.	6th day.	
150	185	197	170	147	169	1018 “
						<hr/> Total 2085 “

D. F. C.

ART. XVII.—*General Report of the Royal Hospitals of Bridewell and Bethlem, and of the House of Occupations, for the year ending 31 December, 1843.* London, pp. 82, 8vo.

WE have read this report with much interest, and shall present a view of some of its most prominent points, together with the ideas which were suggested by the perusal of them.

The Bethlem Hospital is an old institution; so old, indeed, as to have originated, in the corruption of its name, the somewhat expressive word "Bedlam," which, after long use, has, with its derivative "Bedlamite," been placed in our lexicographies, and thus incorporated into the English language.

Manual Labour.—It appears that, although for years, much incidental work has been performed by the inmates of Bethlem, yet no systematic course of labour was established until recently. Eleven workshops have been erected during the past year, in which "it is intended to carry on simple handicraft trades." We are surprised that, in a country like England, this should not have been done before. The example was set by other institutions. At Wakefield and at Hanwell the series of workshops for weavers, tailors, shoemakers, cabinetmakers, &c., have no slight resemblance to a Turkish bazaar, with all the clerks and customers converted into artizans. At the latter asylum, particularly, the population is almost a self-supporting and self-supplying community. We have nothing in America that equals or even nearly approximates it in this respect, and so far, at least, some of the British asylums are superior to ours. The comparatively transient residence of a great proportion of the patients at Bethlem is given as one reason for the delay in the introduction of regular employment. In England, also, as well as in this country, there has been a popular prejudice against the products of labour in public institutions, a prejudice unfounded, excepting in the rivalry of the artizans beyond the pale of such establishments. Sir William Ellis informed us that this was the greatest obstacle to the establishment of systematic mechanical labour at Hanwell, and was only overcome by long perseverance and unyielding firmness of purpose.

The inmates of Bethlem have reason to rejoice at the construction of the "eleven shops," and we doubt not that ere this, as is anticipated by the report, "an industrious and cheerful colony of artizans fill these buildings, instead of pacing the galleries in listless idleness and melancholy silence."

In the female department the variety of employment has also been recently increased, by the introduction of straw-plaiting, bonnet-making, lace-making and fancy-work, and this with the best effect on the patients. Although, as a general rule, the female patients in American asylums are more extensively employed than the males, from the greater facility of supplying them with suitable work, yet the example at Bethlem may furnish a useful hint to the officers of our institutions.

Amusements.—To the previous resources for amusement—the games of chess, draughts, cards and backgammon—there have been recently added a bagatelle-board, facilities for writing and drawing, a piano forte and a library. "On the evening of the last Saturday in the year, (1843,) nearly thirty of the female patients were assembled to celebrate the festive period. Quadrilles were played and danced by some, while others were engaged at a round game at cards." Besides this, they were treated with such a supply of fruit, cakes and other refreshments, that we are almost induced to believe that some of the authorities of Bethlem had been reading Dickens's "Christmas Carol," although it does not appear that there was any "Scrouge" to order the turkeys.

"On both sides of the hospital," says the report, "the introduction of employment and amusements has effected a marked change in the habits of the patients and the appearance of the galleries."

Two special cases are related in which their advantage was strikingly effective in the improvement of the individuals.

In the asylums of our country, pianofortes and bagatelle-boards and libraries have long ceased to be novelties; and parties, with their appropriate refreshments, have for years been events, not of annual, but of weekly occurrence. In the resources for recreation and amusement, the American asylums, as a whole, are in advance of those of Great Britain, as the latter have precedence of the former in the department of manual labour.

Restraint.—It appears to have been but a short time since the patients at Bethlem “were first released from those fetters which were the ordinary means of restraint,” inasmuch as this important improvement was effected by their “late esteemed matron.” During the last five years there has been a diminution of the numbers under restraint, the weekly average having been, in 1839, $11\frac{2}{3}$, while, in 1843, it was but $3\frac{2}{3}$.

The abolition of mechanical restraint upon the persons of the insane is a hobby that has been somewhat hardly ridden during the last few years; and we are not sufficiently positive that some, in their enthusiasm to mount it, have not, like the sailor in the song, found themselves “more than on,” and “over ’tother side.” It is not our intention, in this place, to enter into a discussion of the merits of the question, but we most fully believe it to be the duty of those concerned in the care of lunatics to treat them, in every respect, so far as is practicable and tends to their true interests, as if they were in mental health. If we properly understand the subject, that condition of “entire abolition of bodily restraint,” advocated by some of our British friends, is one which has long existed in some of the American institutions. The British reformers, in regard to this question, have *left off* where many of the Americans *began*, and we confidently believe that, in those English asylums in which the anti-coercive measures have been carried to their greatest extent, the amount of restraint is no less, in proportion to the number of the patients, and with proper allowances for their condition and form of disease, than it has been in some of the American institutions from the time they first went into operation.

“The experience of the last year,” says the report, “adds another confirmation to the now generally-received opinion, that mechanical restraint is an exciting cause for suicidal propensities.” Eighty-one suicidal patients were admitted, of whom thirty-seven had attempted self-destruction previous to admission; yet no effort of the kind was made in the hospital during the year. “During the twenty years, from 1750 to 1770, when every patient was under restraint, the suicides were in the proportion of 1 to 202, whereas, during the last twenty years, the proportion has been only 1 in 963.”

Baths, diet, general treatment, &c.—Previously to the last year, bathing was practised only when “specially directed by the physician, or when required for the purposes of cleanliness;” now, every patient has a tepid bath weekly, unless prohibited by the physicians. Capacious cold baths, as well as shower baths, have also been added for summer use. The patients change their linen twice every week instead of once as formerly was the custom. They have also recently, and for the first time, been supplied with tea and sugar, and this at an expense of nearly four hundred pounds sterling per annum. “*Knives and forks, properly secured, have been ordered to be substituted for the bone implements hitherto used, in those wards occupied by patients in a convalescent state; crockery has also been provided in lieu of the wooden platters and bowls formerly in use.*” Within the last five years the numbers attending chapel have doubled, and within the last ten years have more than trebled. The number of nurses has been increased, this year, from eleven to sixteen, and that of attendants from twenty-one to twenty-five.”

The foregoing items furnish data for the comparison of Bethlem as it is with the same as it has been, as well as with institutions of a similar description in America. In such of the latter asylums as we are acquainted with, the weekly bathing has been in practice we know not how long, but ever since we first knew any thing upon the subject. The custom of changing linen twice in each week is also followed in some, and we believe in most of the American asylums; and we have not the “shadow of a doubt” that, in every asylum of this country, not

only tea but coffee also has been a regular item in the regimen since it first went into operation, provided that period were not anterior to the year 1800. These luxurious beverages, owing to the exorbitant rates of duty in Great Britain, cost from one to two hundred per cent. more in that country than in this, and consequently are much less frequently seen in public institutions.

We have italicised one of the above extracts because it will excite astonishment in the American reader.

In most of the lunatic asylums, on this side the Atlantic, from three-fourths to nine-tenths of the patients, whether convalescent or not, eat with knives and forks, and that, too, without any "proper security," other than is afforded by the hands of the patients themselves; and others, whose condition does not permit this indulgence, are supplied with spoons. A "bone implement" would be a curiosity amongst us, and wooden platters have not been used, we believe, during the last twenty years in any of the public institutions of this country.

Hitherto it has been customary for the physician of the Bethlem Hospital to visit the patients, under ordinary circumstances, but twice a week. This attendance is now daily—a most important and necessary improvement.

The medical department of an asylum for the insane cannot, in our estimation, and for reasons obvious to those acquainted with the treatment of lunatics, be faithfully and well conducted if the physician do not visit his patients at least diurnally.

In the adoption of a measure of great importance to the interests of the community, as well as of the members of the medical profession, the governors of the Bethlem Hospital have preceded those of all American institutions for the insane. "Impressed with the value of increasing the knowledge of this calamitous disorder, (insanity,) a committee of governors have conferred with the physicians as to the expediency of extending the admission of pupils, and the result is a recommendation that each physician should be at liberty to receive any number of pupils, but that no more than four should accompany him when he makes his visits to the patients. And the court has ordered that every facility should be afforded for giving the pupils the advantages of lectures or pathological demonstrations." The autopsic examinations, of which there were twenty during the last year, continue to be made by Mr. Lawrence. To this source we confidently look for one of the most valuable contributions to the pathology of insanity. Appended to the report is a series of twenty-four statistical tables, in which the results of the medical department of Bethlem are recorded with elaborate minuteness and apparent accuracy. But a small portion of these details would be, if isolated, of any interest or value. The most important are recorded below.

Curable patients admitted in 100 years, ending Dec., 31, 1843,	-	-	17,803
Discharged cured,	-	-	7,108
Died,	-	-	1,799
Admitted in ten years, ending 31 Dec., 1843,	-	-	2,758
Cured,	-	-	1,487
Died,	-	-	162
Admitted in 1843,	-	-	284
Cured,	-	-	159
Died,	-	-	19

Of those admitted in 1843, there were single 121; married, 142; widowers, 3; widows, 16.

The origin of the disease was attributed to

	Men.	Women.	Total.
Moral causes in . . .	53	77	130
Physical causes in . . .	29	29	58
Hereditary causes alone	8	19	27
Not ascertained . . .	19	50	69
			P. E.

ART. XVIII.—*A System of Human Anatomy, General and Special.* By ERASMUS WILSON, M. D., Lecturer on Anatomy, London. Second American edition. Edited by Paul B. Goddard, A. M., M. D., Lecturer on Anatomy, and Demonstrator, in the University of Pennsylvania, &c. &c. &c. With over two hundred illustrations by Gilbert. From the second London edition. Philadelphia. Lea & Blanchard, 1844.

THE present edition of this valuable work is enriched by a chapter on Histology by the Editor, and a considerable number of new cuts, among which last are included some very beautiful representations of the nerves.

The remarkable conciseness and perfect clearness of the descriptions, and the numerous and beautiful illustrations, render this work beyond all question the most complete and convenient manual for the student of anatomy that we possess.

ART. XIX.—*Anatomical Atlas, illustrative of the Structure of the Human Body.* By HENRY H. SMITH, M. D., Fellow of the College of Physicians, Member of the Phila. Med. Soc., &c. Under the supervision of WM. E. HORNER, M. D., Prof. of Anatomy in the University of Penn., &c. Lea & Blanchard, 1844. Parts III., IV. and V.

THE first and second parts of this valuable atlas, the former containing the bones and ligaments, and the latter the dermoid and muscular systems, have been already noticed, (No. for January, 1844, p. 174, and No. for April, 1844, p. 433,) and we have now before us the third, fourth and fifth parts, which complete the work. The third part embraces the organs of digestion and generation; the fourth, the organs of respiration and circulation, and the fifth and last part, the nervous system and the senses.

This atlas contains six hundred and thirty-six figures, which are appropriated to the different systems, as follows:—for the illustration of the bones and ligaments, 130 figures; dermoid and muscular systems, 91 figures; organs of digestion and generation, 191 figures; organs of respiration and circulation, 98 figures; and the nervous system and the senses, 126 figures.

These figures are well selected, and present a complete and accurate representation of that wonderful fabric, the human body. The plan of this atlas, which renders it so peculiarly convenient for the student, and its superb artistical execution have been already pointed out. We observe, in our copy of the numbers just published, a few typographical errors, which we learn, however, exist only in the early impressions, they having been since corrected. These errors relate principally to the size of the figures, and are not calculated to mislead, as they are so palpable as to be manifest to the merest tyro. Thus, fig. 449 is said to be but the size of life, instead of *one-third* the size of life, as every one will at once perceive.

We must congratulate the student upon the completion of this atlas, as it is the most convenient work of the kind that has yet appeared; and we must add, the very beautiful manner in which it is “got up” is so creditable to the country as to be flattering to our national pride.

ART. XX.—*A Dictionary of Practical Medicine, comprising General Pathology, the Nature and Treatment of Diseases, Morbid Structures, &c.* By JAMES COPLAND, M. D., F. R. S., edited by CHARLES A. LEE, M. D. New York: Henry G. Langley, 1844. Part I: pp. 144.

THE design of this dictionary is to present, "in an abstract and condensed form, the opinions and practice of the most experienced writers, British and Foreign, so digested and wrought up with the results of the author's practice, that the student and young practitioner will not be bewildered in the diversity of the opinions and facts, adduced for their instruction, but be guided in the difficult path on which they have entered, and enabled with a due exercise of their powers of observation and discrimination, to arrive at just conclusions and successful practical results." And further, to furnish the experienced practitioner with a diversified range of opinions, methods of cure, and authorities, which his matured judgment will enable him to apply in an appropriate manner to particular cases.

This design the author has thus far executed in so masterly a manner as to have obtained general commendation, and to have excited universal regret that the work should have so long lingered in the press, being even still incomplete; and no confidence can be felt that it will be completed within any moderate period, the author having constantly failed to fulfil his promises as to its future progress. The first part was published in London, in 1832, and the assurance was given in the prospectus, that the whole work would be completed in the course of a few months. The second part did not appear, however, until the following year. The third part was then promised "early in 1834," but it was not given until the following year. The fourth part was at the same time announced to be in the press, and to be shortly published, yet it did not appear until two years subsequently, (1837.) In a notice on the cover of this last part, the author expresses his regret that numerous unforeseen circumstances have delayed the appearance of that part of the work, and states that the materials for the remaining parts "are in such a state of forwardness as to induce" him "to promise the fifth part in December next, [1837] and the concluding part in a few months after that." That part was not published, nevertheless, until the following year, and on the cover we find the following notice. "The author assures the subscribers that the materials for the remainder of the work are in such a state of forwardness as to enable him henceforward to bring out a half part every three months until the whole is completed. As most of the important subjects have been already treated of, the work will not extend beyond the volume to which this part belongs." How have these assurances been complied with? Up to the present moment, a period of *six years*, four more parts only have been published, and the ninth part, the last that has appeared, instead of completing the work, only extends to the letter O, and we are told that it will require another volume to finish it. As twelve years have been occupied in preparing the two volumes which have appeared, the materials of the work being, as we have been repeatedly assured, all prepared, it may be hoped, if the author's life is spared, and if no unforeseen obstacles arise, that in six years more the work may be completed. When this most desirable consummation shall be arrived at, those who are living to benefit by it will possess a work which, for the extensive and laborious research which it displays, the ability with which the materials are digested and condensed; the deep reflection and excellent judgment conspicuously manifested, renders it an extraordinary monument of individual industry.

The American editor seems disposed to rival the author in industry, his additions to the part before us being very numerous, and adding greatly to its value, particularly by supplying the observations and experience of American physicians which have been overlooked in the original, and in enriching the bibliography with references to our own literature. We must urge him, however, to be more careful hereafter in correcting the press, so that his valuable additions

may not be injured by such typographical errors as "Pancoast" for Pennock, "Collava de Martigny," for Collard de Martigny, "Ægineta" for Paulus Ægineta, "Valinieris," for Valisnieri, &c.

We regret also to observe that Dr. Turnbull of London is quoted, as if he were some authority, for the use of "hydrocyanic acid as a remedy in incipient amaurosis, as well as in incipient cataract, opacity of the cornea, inflammation, iritis," &c.!

ART. XXI.—*Principles of Pathology and Practice of Medicine.* By JOHN MACKINTOSH, M.D., Lecturer on the Practice of Physic in Edinburgh, &c., &c., &c. Fourth American from the last London edition. With notes and additions, by SAMUEL GEORGE MORTON, M.D., formerly Physician to the Philadelphia Hospital, &c. &c. Philadelphia, Lindsay & Blakiston, 1844: pp. 892, 8vo.

THE first edition of this work appeared in 1829, and though it does not appear to have been received with cordiality by the leading medical journals of the day, probably owing to the vindictive disposition of the author, it has been popular with students, four editions having been printed of it in Scotland and the same number in this country. The spirit in which the author criticises the opinions of some of his cotemporaries is certainly very unamiable, and may lead to the suspicion that his judgment may have been sometimes biased by his animosities; still his work embodies a large amount of valuable information, and with the additions made to it by the American editor and his friends, it will no doubt continue to be received with favour. The present edition has the recommendation also of having been issued in a style exceedingly creditable to the taste and liberality of the publishers.

ART. XXII.—*A Complete Condensed Practical Treatise on Ophthalmic Medicine.* By EDWARD OCTAVUS HOCKEN, Physician to the St. Blenheim Infirmary, &c. &c. Part I. London, Samuel Highly, 1844: pp. 103, 12mo.

OPHTHALMIC literature bids fair to be characterized as much hereafter by its copiousness, as it was until only a few years since by its poverty. Numerous, however, as have been the recent contributions to this department of medical science, Dr. Hocken's treatise will be considered a very useful acquisition. It is to be completed in three parts, of which the first only has appeared. This contains some interesting introductory remarks on the legitimate manner of conducting ophthalmological study, some general remarks on the method of examining the eye, and on the general principles of diagnosing diseases of the eye and their treatment, and a very condensed but satisfactory account of the several diseases of the conjunctiva. The arrangement and manner of treating these subjects are very good, and the author has succeeded in condensing, in a small space, a very large amount of useful information. If the remainder of the work is executed in an equally skilful manner, it will constitute one of the best manuals of ophthalmic medicine at present in our language.

ART. XXIII.—*The Medical Student, or Aid to the Study of Medicine; a revised and modified edition.* By ROBLEY DUNGLISON, M. D., Professor of the Institutes of Medicine, &c. &c. Philadelphia, Lea & Blanchard, 1844: pp. 311, 12mo.

So popular are the works of Dr. Dunglison with medical students, that we doubt not the present publication, a second edition, much modified from the first, will be eagerly sought for by those who propose to engage in medical pursuits. It is divided into four chapters, devoted severally to the consideration of the preliminary education of a medical student—a matter too often thought lightly of—of medical education prior to attendance upon lectures, during attendance upon lectures and after graduation. In effect, the author's aim is to teach the tyro what he ought to, and how he may study to the best advantage both before and after he has attained the dignity of a medical diploma; and while he gives him much good advice in an agreeable manner and enforced by happy illustrations, he endeavours to simplify his labours by presenting him with "a glossary of the prefixes, suffixes and radicals of many of the terms legitimately compounded," of medical technology, a vocabulary of terms used in prescribing and other useful information.

C. R. K.

ART. XXIV.—*Traité des Phénomènes Electro-Physiologiques des Animaux.* Par C. MATTEUCEI. *Suivi d'études Anatomiques sur les système nerveux et sur l'organe électrique de la Torpille.* Par PAUL SAVI. Paris, Fortin, Mason et Cie, 1844: pp. 348, 8vo. Planches, 6.

To those who are interested in electro-physiological investigations this volume will be exceedingly useful. M. Matteucci's treatise contains a minute description of the instruments, and of the method of performing electro-physiological experiments, with observations on the therapeutic uses of electricity. It is illustrated with three large plates.

The concluding part of the volume, by M. Paul Savi, contains a very full and excellent description of the nervous system and electric organs of the torpedo, illustrated by three large and exquisitely executed plates.

ART. XXV.—*Methodus Medendi; or the Description and Treatment of the Principal Diseases incident to the Human Frame.* By HENRY MCCORMAC, M. D., Consulting Physician to the Belfast Hospital, and Professor of the Theory and Practice of Medicine in the Royal Belfast Institution. London, 1842: pp. 574, 8vo.

THIS volume is evidently the production of a deeply read medical scholar—one who has dived into the recesses of ancient professional lore, and is perfectly familiar with the medical literature of the day. It contains an immense mass of medical facts, which could only have been collected with great labour, and which are condensed with much skill; but the author has not always justly appreciated the facts and drawn sound conclusions from them. It cannot, therefore, be recommended to the student, for whom it would not be a safe guide; but the intelligent practitioner, who wishes materials for reflection, and facts from which to form his own judgment, will find this quite a treasury of knowledge.

ART. XXVI.—*A Manual of Chemistry; containing a condensed view of the present state of the Science, with copious references to more extensive treatises, original papers, &c., intended as a Text Book for Medical Schools, Colleges and Academies.* By LEWIS C. BECK, M. D., Professor of Chemistry in Rutgers College, New Jersey, and in the Albany Medical College. Fourth edition, revised and illustrated with numerous Wood Cuts. New York. W. E. Dean: pp. 12mo.

CONSIDERABLE advantage to the learned is afforded by the publication of *Compendiums* of a science which are not so full as to render their perusal tedious and laborious, and yet not so barely composed of facts as to become mere records or summaries. The facts of science can only be advantageously studied when accompanied with clear and succinct explanations, appealing to the understanding, and through it impressing the memory. Elaborate disquisitions may be fitted to the mental capacity of the proficient and philosophic student, but are far beyond the powers of the novice. In writing treatises for mere instruction in elementary principles this has been too often forgotten, and hence the few elementary publications that are really useful. The work before us is entitled a *Manual*, and is complete in its extent, and, as it appears to us, well calculated to fulfil the object intended by its compilation. Its reception, indeed, may be inferred from the edition, which, being the fourth, evinces the favour it has met with. The author has taken pains to give to the present issue of his work the merit of being brought completely up with the discoveries and improvements in chemistry, and has availed himself of the aids to its comprehension that more recently have been devised, among which may be looked upon as most important the use of *symbols*. As a text-book it must prove most valuable, and we heartily recommend it to the attention of such as are in attendance upon lectures, as well as to such as are desirous of reviving their knowledge, but yet are too much occupied to peruse more extended publications. J. C.

ART. XXVII.—*Medical Communications of the Massachusetts Medical Society.* Vol. VII. Part III. Second series. Vol. III. Part III. Boston, 1844.

THE contents of the publication before us are the annual discourse before the society, biographical notices of some of the members who have died during the preceding year, and the proceedings of the society and of the counsellors during the same period.

The theme of the annual address, which was delivered by Dr. John Homans, is the character and qualifications of the good physician; and he has treated it in a very able manner. He points out what the physician ought to be, morally and intellectually, in order to attain, if not to distinguished eminence and a widespread fame, at least to an honourable and an unsullied name, in his profession. We had marked several passages for extraction, but have room only for the following:—

“The physician must be a man of firmness, decision, self-reliance; able to meet emergencies, to think and act for himself as the case before him demands, and not as a servile imitation of the course of treatment described in a case somewhat similar would suggest. He must be superior to the inveterate prejudices of time-honoured theories and the seducing novelties of caprice and fashion, neither adhering to the one, and opposing the other, nor abandoning the one and adopting the other, with an obstinacy or a facility, alike to be condemned by a calm, clear, comprehensive judgment. He must not suppose all truth in the science of medicine to have been ascertained, nor accept with slight questioning every thing new as true, to be confided in and practised upon. With a mind open and active, with an observation extensive, accurate and discriminating, with the feelings that arise from association, habit and long-cherished opinion, under the control of the judgment, he must ‘prove all things, and hold fast that which is good.’”

SUMMARY

OF THE

IMPROVEMENTS AND DISCOVERIES

IN THE

MEDICAL SCIENCES.

ANATOMY AND PHYSIOLOGY.

1. *Functions of the Lacteals and of the Veins.*—M. CHATIN's experiments were made for the purpose of ascertaining whether poisonous substances were introduced into the circulation by means of the veins, or by that of the lacteals.

1. Eight dogs were poisoned by introducing into their stomachs a large dose of arsenic, mixed with milk, and then tying the œsophagus. The blood of all these animals, both that extracted from the heart and from the large vessels, was incinerated with nitrate of potash. The product of the incineration furnished, by means of the apparatus of Marsh, a distinct ring, and spots of arsenic, which, on being subjected to the proper tests, furnished all the characters of that metal. The chyle collected from the thoracic duct of these eight dogs, added together, and treated in the same manner as the blood, yielded not the slightest trace of arsenic.

2. Like experiments were made on dogs by substituting tartar-emetic for the arsenic. The animals were killed about an hour after the administration of the poison by opening the carotid arteries. The antimony was found in the blood, but not even a trace in the chyle.

3. A quantity of blood abstracted from different individuals, who had been taking antimony in large doses, furnished a notable quantity of that metal.—*Ed. Med. & Surg. Journ.*, from *Comptes Rendus des Sc. de l'Acad. R. des Sc.*, &c., March 4, 1844.

2. *On the Development of Animalculæ in the Alimentary Canal during Digestion.*—It appears, from the researches of MM. GRUBY and DELAFOND, that in a very great number of animals, the process of digestion is accompanied by the development of infusory animalculæ within the stomach and intestines. Four species were met with in the Ruminantia; seven in the horse; two in the dog; but only one in the hog. These animalculæ exist in such numbers that in the sheep it was reckoned that not less than from 18 to 30 ounces in weight of them were present,—a quantity very nearly equal to a fifth part of the fluid in which they swim. These infusoria are seen alive in prodigious quantity in the first and second stomachs of the Ruminantia; but in the third and fourth stomachs of these animals their carapaces or crustaceous envelopes are alone seen. In the horse, however, they are found alive throughout the whole length of the intestinal tube, excepting in the narrowed part of the colon and the rectum. From these facts MM. Gruby and Delafond conclude, that these animalculæ are digested in the fourth stomach (caillette) of the Ruminantia, and in the colon of the horse, and that both of these organs thus furnish a nutritive animal juice. They also infer that a fifth part of the vegetable matters introduced into the stomach of the herbivorous animals is destined to produce infusoria, which, digested in their turn, furnish animal matters to the general nutritive materials, and that this conclusion appears to receive a strong degree of probability from

the circumstance, that in carnivorous or omnivorous animals, as the dog and pig, the infusoria are not only much less numerous and smaller in size, but consist of only one or two species.—*Ibid.* from *Ibid.*, December 11, 1843.

3. *Influence of the Eighth Pair of Nerves on the Chemical Phenomena of Digestion.*—A paper was read May 27th on this subject, to the Academy of Sciences, by M. BERNARD, who proposed, in a series of experiments, to inquire, in a more precise manner than has hitherto been done, into the part which we ought to attribute to the influence of the pneumogastric nerves in the act of chymification. It is well known that authors are not agreed as to the precise property which these nerves enjoy in the digestive process, and that many points of this question are a matter of controversy. The different and frequently contradictory results arrived at depending on the difficulties of observation, M. Bernard was of opinion that if the functions of the stomach could be performed under our own eyes, the study of these phenomena would be facilitated, and that it would be possible to appreciate the series of chemical changes which take place in this organ before and after division of the eighth pair of nerves.

M. Bernard made a fistulous opening in the stomach of a dog, so as to observe what passed in this viscus during digestion. The animal was submitted alternately to two kinds of nourishment; first, to raw flesh; secondly, to a kind of soup composed of bread, milk, and sugar cane.

At the moment these aliments were injected, the mucous membrane of the stomach became red, turgid and erectile, exhaling from its surface an acid and transparent fluid, the gastric juice which moistened the food. The raw flesh at the end of two or three hours was reduced to a chymous paste, with a very acid reaction. When the soup was given, the milk at once became coagulated; in about half or three-quarters of an hour afterwards, the whole formed a whitish homogeneous and very acid pulp. No sign of fermentation was ever observed in these mixed matters. The sugar found in the latter, whether examined at the beginning or at the end of digestion, was always in the state in which it exists in the cane.

After eight days of observation, M. Bernard resolved to divide the pneumogastric nerves. The dog having fasted for twenty-four hours, the experimentalist withdrew the apparatus, which habitually closed the fistula, and cleansed the interior of the stomach with a soft sponge. The viscus manifested a marked sensibility, and contracted upon the foreign body, the mucous membrane pouring out an abundance of gastric juice. Division was then made of the pneumogastric nerves in the middle of the neck. Immediately the mucous membrane, which was turgid, shriveled up and became pale, as though it was bloodless. Its sensibility and motion ceased, the production of the gastric juice was instantly arrested, and an abundant secretion of a ropy mucus, with a neutral reaction, soon succeeded in its place. Some morsels of flesh, and some soup, with sugared milk, were then introduced into the stomach. In an hour's time the bread was found softened, and saturated with the mucus; the milk was not coagulated; the meat had not undergone any alteration; and the whole alimentary mass presented a neutral reaction. At the end of two hours things remained precisely in the same state.

After eight hours M. Bernard found in the stomach a sort of whitish pulp, with an extremely acid reaction. But there was no difficulty in proving that this acidity arose from a lactic transformation, which was effected in the midst of these matters by the sugared soup. The meat had not experienced the least change, and all was found in the same state after a lapse of twenty-four hours.

We may observe from this first experiment, said M. Bernard, 1st, that the division of the pneumogastric nerves not only extinguished sensation and motion of the stomach, but that it also instantaneously arrested the secretion of the gastric juice.

2d. That after this division, digestion did not take place, since, twenty-four hours afterwards, the pieces of meat introduced into the stomach were found entire and unaltered.

3d. It was especially remarked, that in the absence of the gastric juice, spontaneous decomposition took place in the midst of the matters contained in the stomach, which was demonstrated by the lactic transformation, developed by the agency of the soup and sugared milk.

In other dogs in which he had divided the pneumogastric nerves, M. Bernard perceived, after three or four hours of ingestion, conversion of the cane-sugar into grape-sugar; and at the end of ten or twelve, lactic transformation was complete. When the alimentary substances, as the meat for instance, were not susceptible of giving rise to acid decomposition, the neutral reaction of the stomach continued throughout. Thus two series of chemical phenomena of a very different nature may take place in the stomach, according as this organ receives, or is deprived of its normal nervous influence. In the former case gastric juice is produced, which effects chymous dissolution of the aliments. In consequence of this action, the substances contained in the stomach are submitted to special decompositions, and they lose the property of fermenting or reacting upon each other. Thus the gastric fluid prevents putrefaction. If, on the contrary, the stomach is deprived of the influence of the eighth pair of nerves, digestion is arrested, and the articles of food, not modified by the gastric juice, react upon each other.

M. Bernard related a more recent experiment which rendered the preceding facts still more evident, whilst it proved that absorption may take place in the stomach, even after the division of the pneumogastric nerves. It is known that emulsine and amygdaline are two innocent substances when they are administered by themselves, but that they develop hydrocyanic acid and become a violent poison when placed in contact.

Having taken two dogs that had fasted, Mr. B. divided in one of them the pneumogastric nerves. In the stomach of each animal he injected a dose of emulsine, and about half an hour afterwards an equal quantity of amygdaline. The dog in whom the nerves had been cut died at the end of a quarter of an hour, with symptoms of poisoning by hydrocyanic acid, the other survived without experiencing any symptoms. In the latter case, the emulsine, modified by the gastric juice, had lost the property of reacting on the amygdaline.

The author concluded from this last series of experiments, that in digestion the alimentary substances are exclusively submitted to the powerful influence of the gastric fluid. Their natural affinities then appear in some manner destroyed, and no spontaneous decomposition is effected between their elements.

That after division of the pneumogastric nerves these reactions take place, owing to the absence of gastric juice from the stomach.—*Prov. Med. and Surg. Journ.*, July 31, 1844.

4. *Transmission of Hydatids by Contagion.*—Some highly interesting and curious researches on this subject have recently been published by Prof. KLENCKE, of Brunswick. After commenting upon the vague manner in which the term hydatid has been applied, the author proposes the following definition:—"Every vesicular production found in living organized tissues, which is provided with spontaneously moving organs, or which has at least the power of reproduction, apart from the tissue in which it is lodged by giving birth to individuals similar to itself." The different species are then characterized, the situations in which they are commonly met with pointed out, and many other particulars connected with the natural history of these productions, noticed.* The most important part of the memoir, however, is that occupied with an account of the experiments performed by Professor Klencke upon propagating hydatids by means of inoculation. With the object of examining the reproductive powers of the false hydatid, (*Hydatis spuria*), he injected warm water containing some of these hydatids, collected from the brain of a fresh human subject, into the abdominal cavity of two puppies and two kittens. After the injection, the opening was carefully closed, the animals were restored to their parents and grew perfectly

* [See No. XIII. of this Journal for Jan. 1844, p. 196.]

well. At the end of three months he found upon examining the abdomen, in setting out from the punctured wound, an adherence of the parietal layer of the peritoneum, with the epiploon at the seat of puncture, and upon this adhesion, as well as upon the internal surface of the peritoneum, in the neighbourhood of the cicatrix, there existed in both the puppies, and in one of the kittens, a very great number of false hydatids. In the other kitten, in which no adhesions had taken place, there was no trace of these productions in the neighbourhood of the cicatrix, whilst upon the peritoneal surface of the bladder, a mass of false hydatids was found projecting into the abdomen.

Some very small hydatidic cellules were taken from the plexus choroides of a man, and with them the orbit of a hen was inoculated. The inflammation which supervened subsided by the eighth day. At the end of thirteen weeks the whole external wall of the orbit was tumefied, and the eye pushed inwards. Upon examination after death, the orbit was found filled with a cellular mass containing a very great number of false hydatids. The whole brood of these hydatids was injected into the femoral vein of a kitten. At the end of three weeks the animal became sullen and habitually sleepy. Upon examination there was found in the heart, and especially in the right auriculo-ventricular orifice, a fibrinous and gelatinous precipitate, containing an innumerable quantity of false hydatids.

The false hydatids are more rare in the lower animals than in man, and their transmission is more easily effected when the species of animal inoculated is not far removed from that which furnished the parasite. In regard to the acephalocysts and echinococci, the author says that he has found the former in the milk of the cow, and floating along with them, in the serum of that fluid, the small ovules that are met with in the bodies of these animals. Both forms of hydatid are met with daily in the flesh and blood of animals, and if the process of cooking does not destroy them, we must run continual risk of contagion.

With a view of ascertaining what effect digestion would produce upon them, he instituted the following experiment:—Some full-grown echinococci were placed in the gastric juice of a dog, and in that of a man; at the end of three hours they appeared dead, their head being retracted, and they exhibited no signs of movement. After having washed them well in warm water, they were introduced into the subcutaneous cellular tissue of the thigh of a kitten; eight days afterwards the wound had cicatrized. He next took some echinococci, which had been immersed in gastric juice, diluted with half the quantity of milk or water, and inoculated a young dog by an incision in the abdomen, reaching to the peritoneum, but without opening the latter, upon which he placed two of the parasites; the wound was accurately closed by suture, and at the end of three weeks he found a cellular and highly vascular cavity, containing a yellowish serosity, in which were two echinococci, remarkably modified in form. They were transformed into vesicles, covered upon their external surface with a number of gemmules and isolated cells, supported by pedicles. Examined under the microscope, these cells, upon being crushed, gave exit to a multitude of other small cells, similar to those found in the body of the acephalocysts, and which represented the ovules. The hydatids being open, exhibited upon their internal surface a still greater number of gemmules, pediculated cells, and other cells, floating freely in the liquid.

From an extensive series of experiments, Professor Klencke deduces the following conclusions:—1st. That in all hydatids we observe a cyssiparous and oviparous reproduction.—2d. That there are false hydatids, which propagate by blastoderm (blastidie).—3d. That all hydatids are transmitted from one organism to another, and being found in our fluid aliments, and in the flesh of animals, can be transmitted by infection.—4th. That the acephalocysts are not distinct from the echinococci, but merely the ova of the latter, with or without the parent cyst.—5th. That whatever be the way by which they have entered the animal system, hydatids can be conveyed by the current of the circulation.—6th. That certain agents in the organism and medical substances have the power of destroying them.—*Annals of Nat. History, from Gaz. Méd. de Paris, Dec. 30, 1843.*

5. *Reunion of a divided Nerve*.—Dr. OKE relates, in the *Provincial Medical and Surgical Journal*, July 24th, 1844, the following interesting fact in a physiological point of view.

“In cutting through the muscles in an operation for necrosis of the humerus, the musculo-cutaneous nerve was unavoidably divided, which occasioned the instantaneous dropping of the hand. This appeared at first to be an unfortunate result, as it was feared it might occasion the permanent loss of the hand and deprive the patient of the power of writing, for he could use his pen tolerably well.

“To make up for so serious a deprivation in some degree, as soon as the state of the right arm would admit of it, he was sent to a schoolmaster to be taught to write with his left hand, which, in about four months, he accomplished; but at the end of this time I was gratified to observe a returning power in the right hand. The power gradually increased; and in the course of a few weeks he completely regained its use, and thus was enabled to write with both hands.

This was an important fact in physiology, inasmuch as it showed that the trunk of a nerve, though it be divided and its ends kept apart for a considerable time, might eventually unite and regain its normal functions.”

6. *Open Foramen Ovale—no cyanosis*.—Dr. WOODHOUSE exhibited to the Reading Pathological Society a heart taken from a woman aged 71, who died of apoplexy. The foramen ovale was patulous to a considerable extent—about half an inch; the valvular portion of the septum auriculorum unusually large. There were no symptoms during life, as lividity of countenance, deficient nutrition, &c., to indicate such a condition.—*Prov. Med. and Surg. Journ.*, July 24, 1844.

7. *Metallic Mercury in the blood and organs*.—Dr. OESTERLIN has discovered, by means of the microscope, minute globules of metallic mercury in the tissues in the blood, and in the secretions of men and animals to whom mercurial ointment has been given internally and applied by frictions to the skin.—*Gaz. Méd. de Paris*, Jan. 5, 1844, from *Roser und Wunderlich, Archiv. für Physiologische Heilkunde*, 1843.

8. *Microscopic Anatomy of Tubercles*.—The following are some of the most important conclusions of an elaborate memoir, that was recently communicated to the Academy of Sciences.

1. The constant microscopic elements of tubercles are these: *a*, molecular granules; *b*, a hyaline interglobular substance; and *c*, the proper corpuscles, or globules of tuberculous matter. These globules contain a number of molecular granules, but no distinct nuclei. They are not affected by water, ether and the feeble acids; but they are dissolved by the strong acids, as well as by ammonia and caustic potash.

2. The opinion of certain pathologists, that tuberculous deposit and its globules are only modifications of purulent matter, is contradicted by the result of microscopic inspection; the differences between them are strong and decided. The corpuscles of the latter are considerably larger, of a regularly spherical shape, and contain from one to three nuclei: they are, moreover, usually free and isolated: whereas, those of tuberculous matter are, especially in the crude state of tubercles, closely joined together. The globules of cancerous matter are twice or even four times as large, and they contain a nuclei, in which again from one to three nucleoli are often observable.

3. In sarcocele and also in scirrhus and encephaloid tumours of the mammæ, we not unfrequently find a yellowish, cheesy-looking substance, which much resembles genuine tuberculous matter; but a careful examination with the microscope clearly shows that it consists entirely of globules of cancer infiltrated with fat.

4. When tubercles soften, their interglobular substance liquifies, the globules separate from each other, and may then, by absorbing a certain portion of the fluid, become larger; this change does not constitute an increased growth, but, on the contrary, the commencement of the process of decomposition.

5. The pus, which is found blended with the softened tuberculous matter, is supplied by the surrounding tissues and is by no means the result of any transformation of the matter itself; but the pus, it must be confessed, quickly alters it, and renders its elements much less easily recognizable.

6. The globules of softened tubercles become ultimately dissolved in a granular fluid, and thus the *ramollissement* of their substance passes fairly to the state of diffuence.

7. The cretaceous condition of tuberculous matter presents, under the microscope, the appearance of amorphous mineral granules, blended often with crystals of cholesterine and colouring matter. A part of the tuberculous globules is then removed by absorption, while the other portion remains for a long time in an unchanged condition.

8. Occasionally we find, in tuberculous deposit, corpuscles of fat, melanosis, greenish-coloured globules and crystals which have the form of those of the ammoniaco-magnesian phosphate. Besides these admixtures, we may find, blended along with them, the elements of inflammatory and suppurative action, and various sorts of epithelial exudation; all of which tend to modify the essential microscopic features of the tubercles.

9. The seat of tubercles in the lungs is usually the inter-vesicular elastic cellular (or areolar) tissue: sometimes, however, they are secreted into the air-vesicles themselves and into the capillary bronchial tubes.

10. The semi-transparent gray granulations of the lungs are composed of tuberculous granules, interglobular substance, which is more abundant and more transparent than in the yellow tubercles, and of pulmonary fibres more or less altered in their appearance. They are not invariably the "point de depart" or primary condition of the miliary yellow tubercles; as these latter are sometimes developed as *such*, from the very commencement of their deposition.

11. Microscopic examination most decidedly exposes the fallacy of the opinion that the gray granulation is the product or effect of inflammatory action.

12. A vomica or tuberculous excavation is in every respect analogous to a tuberculous ulcer of the skin or intestinal canal; it is not necessarily preceded by, or the result of, the suppurative process. As a general remark, it may be asserted that phthisis is accompanied with an ulcerative diathesis.

13. The fluid of pulmonary excavations contains the following elements: *a*, tuberculous matter, with globules which are either much more turgid than usual, or are altogether diffuent; *b*, globules of pus sometimes in small quantity; *c*, purulent globules; *d*, granular globules; *e*, globules of mucus or of muco-pus; *f*, blood globules; *g*, pulmonary fibres; *h*, black pigment; *i*, epithelium shreds; *j*, crystals; and *k*, globules of fat. (Surely there is a good deal of hair-splitting nicety in such an enumeration as this.)

14. The cavity of a vomica is lined with a pyogenic membrane, the formation of which may be regarded as a curative effort of nature to isolate the cavity from the surrounding tissue, and thus to favour its cicatrization. The cicatrization is in many cases promoted by a new secretion of fibrous matter, and occasionally also of a chalky deposit at the same time.

15. The thickening of the pleura over the seat of tuberculous deposit is the result not of inflammation alone, but also of an augmented nutrition or hypertrophy, in consequence of the increased flow to it of the blood, which formerly permeated the (now obliterated) capillary vessels of the surface of the lungs. It thus becomes a supplementary organ of circulation in phthisis and serves to increase the anastomoses with the aortic circulation by its intimate adhesions with the parietes of the chest.

16. The liver is often the seat of extensive tuberculous deposit; and this lesion may readily be mistaken for cancerous transformation. The distinctive microscopic characters are most to be trusted to in the pathological diagnosis of such cases.

17. The fatty degeneration of the liver and heart—so accurately described by M. Bigot—exhibits a tendency to the internal deposit of fatty matter in phthisis,

while all the fat of the external parts of the body is at the same time entirely absorbed.

18. We occasionally find a quantity of tuberculous deposit in old membranous deposits on the pericardium. In a case where the pericardium adhered firmly to the surface of the heart and all the surrounding parts, numerous anastomoses between the ramifications of the coronary vessels and those of the surface of the lungs were found to have been established.—*Med. Chirurg. Rev.*, July, 1844, from *Gazette Médicale de Paris*.

MATERIA MEDICA.

9. *Colchicum a substitute for Ergot to induce uterine contractions*.—Dr. NETTA relates, in *Il Filiale Sebezio*, a case of abortion, in which the placenta was retained, and the uterine contractions had ceased. Two doses of powdered root of colchicum, at an interval of half an hour, were prescribed by Dr. N.; and soon after the second dose uterine contractions came on. Whether these were the effect of the remedy or not must be determined by further experience. It has, however, been asserted by others that colchicum possesses ocyocic properties.

10. *Therapeutic employment of the Chloruret of Tin*.—M. NAUCHE has recommended the chloruret of tin in cancerous affections, and the following are the formulæ in which he prescribes it:—

Solution of the Chloruret of Tin.—Twenty-five milligrammes of the chloruret of tin, five hundred grammes of distilled water. This solution is given to the patient in the dose of an ordinary teaspoonful daily; each dose is taken in a cupful of gum-water. M. Nauche also prescribes the solution in lotion as a dressing for cancerous ulcers.

Ointment of the Chloruret of Tin.—One to two grains of the chloruret of tin, thirty grammes of lard, mixed together, and made into a very homogeneous ointment, which is to be divided into eight equal portions, one of which is to be employed daily in friction, on the inner parts of the legs or thighs. M. Nauche avers that he has derived great benefit from the use of these two preparations in cases of glandular enlargements, in scirrhus affections, and even in the treatment of ulcerated cancers.—*Med. Times*, from *Bouchardat's Annuaire de Thérapeutique* for 1844.

11. *On the Therapeutic Action and Uses of Ergot of Rye*.—By M. SACHERO, Professor of Clinical Medicine in the University of Turin.

I. GENERAL REMARKS.—The author commences his paper by showing that, from time immemorial, the ergot of rye has been used as a means for accelerating the progress of labour; but powerful as it is as an agent for attaining this end, he believes that it is only capable of doing so when the process has already commenced, and that to ensure success, even then, it should not be administered at too early a period. The fact that the ergot acts only in this manner, he considers a very important one; for, were it otherwise, it might be often used criminally for the purpose of causing abortion. In proof of this view, that the ergot acts more as an assistant than as a provocative to labour, he cites the following case: The mother of a family had become pregnant in a clandestine way and was desirous of procuring abortion; with this intent she took, for a considerable period, pills composed of the ergot, containing two grains in each, but without effect; having reached the eighth month, she commenced taking five of the pills at a time, twice a-day; in the course of twenty days, she took two drachms of the ergot, but with no other effect than that of causing slight pains in the loins, and some disorder of the stomach. At the end of the ninth month she was safely and easily delivered. It would appear that the child, however, had suffered from its use, for its skin was very red, and covered, here

and there, with a concrete and adhesive albuminous substance; it was sickly and feeble, and lived only twenty days.

This fact, then, he considers as proving that the ergot of rye, even in large doses, does not excite abortion, provided the mother and child are in good health. And this conclusion is not overturned by what occurs in the convulsive gangrenous affection arising in pregnant women from the use of bread containing the ergot, because, in this case, there is a true poisoning, by means of which the conception is destroyed, and then the uterus, sooner or later, contracts and expels the foreign body, as always happens, whatever may have been the cause of the death of the fœtus.

The abuse of the ergot of rye in pregnant women may thus cause the death of the fœtus, and at last either produce abortion or parturition; but the inducement of labour, thus ascribed to the medicine, is only produced by its having first destroyed the child, whose body afterwards causes uterine contractions, and, by the continuance of the medicine, these latter may be sustained.

Those who have been in the habit of administering the ergot in tedious and difficult labours have not failed to observe that it had also a power of arresting hemorrhage, more especially in cases of abortion. Hence the name hemostatic. It has been given for this purpose by Atlee, Shalcross, Dewees, Marshall Hall and Speirani of Pavia; the latter, in his clinical researches, prescribed it, not only in uterine congestions and menorrhagia, but also in epistaxis, pulmonary hemorrhage and hæmaturia. The experience of Speirani as to its usefulness in pulmonary hemorrhage is confirmed by Sachero, who cites two cases of abundant hemoptysis cured by it. It has also been used by Bazzoni, who, in 1831, published a work on the subject, in which he announced the following conclusions: 1st. That the ergot of rye is a certain remedy in uterine hemorrhage and leucorrhœa. 2d. That the disagreeable sensations caused by it in the head are merely temporary. 3d. That, if administered with prudence, it is without danger. 4th. That it is equally efficacious, whether the discharge be active or passive. 5th. That its use is beneficial, even in those cases where the uterus and its appendages are affected with organic disease. 6th. That menstruation is not disturbed by its use. In the same year Pignacca also published some cases of hemoptysis and menorrhagia cured by the same means; and similar facts have been published by Cubini, F. Müller and others.

The investigations of M. Sachero, however, as to the employment of this substance as a therapeutic agent extended still farther. "Reflecting," he says, "on its beneficial effects in urethritis in man, effects due to its hyposthenic action on the vessels of the mucous membrane, I conceived that the same action might extend to the mucous membrane of the whole genital apparatus, and in consequence, I tried the use of the ergot in involuntary seminal emissions, and particularly in cases the most obstinate; the result exceeded my expectations; the cure was invariable; and I believe I have solved the problem which perplexed Lallemand and others. I published my observations on this subject in the *Giornale delle Scienze Mediche* in 1839. In the four cases which occupied my first note, I had remarked that there was irritation of the gastro-intestinal mucous membrane, and this led me to believe that seminal emissions had their origin in a hypersthenic state of the mucous membrane of the genital organs."

Some details regarding the good effects of the ergot in intermittent fevers and paraplegia are here given.

The latter facts confirm the author in the opinion that the elective action of the ergot is specially directed to the inferior portion of the spinal cord. He cites some cases of obstinate bronchitis, from his clinical reports, which yielded as by enchantment to the use of this remedy; and, lastly, a case of severe otorrhœa which occurred in a young lady of a lymphatic temperament, who, after angina, was attacked with suppurating otitis, accompanied with head symptoms and a fever. Repeated blood-letting and the other usual remedies were tried, but without the least avail. Injections into the ear were then tried, consisting of an infusion of the ergot, made with 4 grammes of the latter to 120 grammes of boiling water; the medicine was, at the same time, given internally; there

was immediate melioration, and a complete cure followed in the course of a month.

II. PHARMACEUTICAL REMARKS.—The following details as to the mode of treating the ergot M. Sachero owes to personal communication with M. Bonjean, the celebrated pharmacist of Chambéry, whose analysis of ergot is the most careful and recent which we possess. The active principles of this powerful remedy may be reduced to two; the watery extract soluble in cold water, and the resinous extract soluble in alcohol. Desirous of studying the effects of these extracts separately, he caused M. Abbene, apothecary to the Hospital Saint Jean, to prepare a certain quantity of each. The following was the method pursued: Three medicinal pounds weight of the powdered ergot, of good quality, gathered towards the end of harvest when in a state of maturity, were treated with boiling water by displacement, and a liquid obtained which, on cooling, deposited a sediment composed of the resinous extract, and a portion of gum; the fixed oil rose to the surface and was easily separated by decantation. The diaphanous liquid evaporated by means of a water bath, yielded 245 grammes (8 oz.) of watery extract, to which Bonjean has given the name of hemostatic extract, (*extrait hémostatique*) and which is composed of ergotine and a little gum. The sediment mentioned above, as well as that remaining in the filter, was afterwards treated with alcohol at 25°; and this solution, filtered and evaporated, yielded 20 grammes of resinous extract. Thus the ergot, in these operations, yielded nearly a quarter and a half of its weight of watery extract; and hardly a 57th of resinous extract. He does not consider it necessary to give any details respecting the oil, whose proportion may be about 35 per cent., and for the reason that it has no special action on the uterus; its use, moreover, is not unattended with danger. In a letter lately sent by M. Bonjean to the Academy of Sciences, through M. Dumas, he stated that he had discovered a method of freeing the hemostatic or watery extract from the albumen which it contains, by submitting to ebullition, by means of a water bath, the solution made with cold water by the method of displacement; the ebullition causes the albumen to coagulate, and it can afterwards be readily separated. The purest extract is that obtained by evaporation; the author names it ergotine, but this is incorrect, as it is not a simple body. When boiling water is used for the first method by displacement, there is this double advantage, 1st. That of coagulating the albumen immediately, which can be afterwards separated from the liquid; 2d. It is not necessary to leave the liquid for any length of time in a state of rest, as done by Bonjean, to obtain the resinous extract, as that is effected by the simple act of cooling. Decompositions so frequent, especially in summer, are thus avoided.

III. DYNAMICAL ACTION.—Having thus obtained a sufficient quantity of the two extracts, he instituted a series of experiments to determine the dynamical action of each; that their action would not be identical, he conceives, might be conjectured from their appearance; the watery extract is of a reddish-brown colour, with a smell of ozmazome, and has a slightly pungent and bitter taste, similar to that of spirit grain, but not astringent; whilst the resinous, on the other hand, is of a deep brown colour, with no particular smell, and is very pungent and slightly bitter to the taste.

A. Watery extract. The astringent (hemostatic) power of the ergot, whether given in powder, infusion or decoction, has been long known. It is probable that if the infusion be used, more especially after allowing it to cool, we obtain only the watery extract or ergotine of Bonjean; consequently, this form should be preferred if we wish to control hemorrhage, or any other discharge arising from acute or chronic inflammation, such as leucorrhœa, or purulent discharge from the ear. The facts already cited prove this. But it is to Bonjean we are indebted for having proved by experiment, that the hemostatic power belongs exclusively to the watery extract. Some cases follow here of uterine hemorrhage arrested by means of this substance. It was also given to two women in labour, which was advancing slowly, with sluggish contraction of the uterus. 30 grains of the extract, (a gramme and a half,) were prescribed in 120 grammes of water; no effect followed; and uterine contractions only appeared some hours later,

consequently they could not in strictness be attributed to the remedy. "It appears, therefore, that the watery extract, instead of hastening labour, retards it, and that the power of producing uterine contractions does not belong to this ingredient of the ergot."

B. Resinous extract. In consequence of the latter supposition, he should next have proceeded to inquire if the resinous extract possesses the power of inducing uterine contraction. But facts, he says, are yet wanting to decide the question. As far as is known, however, it would appear, from the experiments instituted by Bonjean on rabbits and dogs, that it has no sensible effect upon them. Our author tried the effect of it on his own person, and also on that of a friend considerably younger than himself. "I took," he says, "at eight in the morning, and with an empty stomach, 16 centigrammes (5 grs.) of the resinous extract, prepared by M. Abbene, and made up into a couple of boluses, with the extract of violets; the one was taken at the time mentioned, and the other in the course of an hour. I had hardly swallowed the first dose when I experienced a sensation of heat in the throat, nausea and oppression at stomach; these sensations were felt for a quarter of an hour, and they returned, but with less severity, after the second dose. At a later period, I felt some heat and itching at the base of the glans penis; and during the course of the day a few drops of mucus escaped from the urethra." His friend took the medicine in another form. He dissolved 25 centigrammes in alcohol, diluting it afterwards with water, and he took the whole in two doses; he experienced some pain and heat of stomach, then pain in the bowels, after which the latter were moved; his habit was usually constipated. Ten days after, Sachero again repeated the experiment on himself; taking 10 grs. in two doses, he experienced merely a sensation of heat in the bowels, and some smarting in the urethra. Six days after he took 15 grs. with nearly the same effects. No other conclusion, he thinks, can be drawn from these experiments than that the resinous extract is perfectly harmless. Bonjean had already arrived at the same conclusion in regard to the watery extract; and this circumstance would lead us to believe, with this eminent chemist, that the poisonous principle of the ergot is the oil already mentioned. In conclusion, M. Sachero agrees with those accoucheurs who believe that the most suitable form in which the ergot can be given is the simple powder, and that without submitting it to any further preparation.

C. The fixed oil. It has been already stated, that, according to the analysis of Bonjean, the quantity of this oil in the ergot may amount to about 35 per cent., and that it is this element which constitutes its poisonous principle. It produces on animals all the symptoms of poisoning by the ergot in substance; and the same appearances are found in the body after death.

IV. CONCLUSIONS.—From what precedes, then, it follows, 1st. That the watery extract (hemostatic extract or ergotine of Bonjean,) is a hyposthenic remedy acting on the general vascular system; and that by means of it we can control hemorrhage, morbid sero-mucous discharges, and lessen over-action of the heart. Its action is clearly demonstrated to be on the vessels of the uterus, because, by its aid, we can control menorrhagia, threatened abortion, slight metritis and excitement of the uterine capillaries. The circulatory system being dependent on the great intercostal nerve, it follows that the action of the watery extract extends to this nerve and its numerous ramifications, as especially to those which preside over the life and functions of the uterine vessels. 2d. The resinous extract probably acts as a stimulant and its action extends to the nerves both of sensation and motion of the uterus. It is highly probable that when the ergot is administered in powder, it is in this extract that the principle resides which rouses into activity the inert uterine contractions which had previously commenced. 3d. The action of the ergot, when administered in its natural state, appears to be of two kinds; the one, as in labour, affects the sanguineous system, the energy of which it diminishes (hyposthenises) by means of the ergotine; the other, is upon the nerves of the uterus, which it stimulates by its resinous principle. To this double action must be added a third, equally hyposthenic, that of the oily or poisonous principle. Thus, then, in practice, several indications may be ful-

filled by the isolated administration of these principles, and by the ergot in its natural state. The study of these cannot fail to extend its power, as a therapeutic agent, when we have first determined the special circumstances in which they should be applied. 4th. The ergot only acts beneficially in labour, if this process has already commenced, when the amnion is ruptured, the position of the child natural and the uterine contractions have been arrested or enfeebled, either by oppression of the forces, or by actual debility. In this latter case, the resinous extract is to be preferred to the watery or ergotine, consequently, the ergot has no effect in inducing abortion or labour, unless there is previously a commencement of uterine action. There is, nevertheless, an exception to this rule; and that is when the fœtus is dead, or the uterus contains a tumour; but when this occurs the uterus is in an unhealthy state, and, most generally, the ergot only acts by exciting the organ to contract, or facilitates and hastens the operation if already begun. If the ergot is given in large and repeated doses, previous to the commencement of labour, it either destroys the child, producing immediate labour, or at all events it sickens it. 5th. Its use is strongly indicated in hemorrhage, arising from partial detachment of the placenta. In this case, life, as is well known, is in danger, if the flooding is great and labour not speedily accomplished. The ergot, in its natural state, or one or other of the extracts, may be prescribed, according to the state of the patient. There are cases where the woman suffers from a true and general plethora of the uterus, recognizable by the state of the pulse, which is full and slow, dyspnœa, the swollen state of the veins of the hands, legs and feet, which become blue, and by a severe throbbing headache. In these cases the patient should be bled once or twice, and then, if the uterus still continue inert, the ergot in its natural state may be prescribed, if it is thought proper and necessary to excite labour; if this is not considered desirable, then the ergotine should be had recourse to, if we wish to prevent hemorrhage and abortion. A bleeding should always precede the remedy in cases of congestion of the uterus. 6th. If the uterus does not expel the placenta spontaneously, within a few hours after the birth of the child, the use of the ergot re-excites the contractions in the course of seven or eight minutes, or in a quarter of an hour at most. 7th. In the preparation of the remedy it is an essential circumstance that the ergot be not gathered till it has reached a state of perfect maturity, towards the end of harvest, and in places with a free eastern exposure. If it be not perfectly ripe, it has either no action, or it is very feeble, as shown by the experiments of Bonjean. In this case it merely contains a little watery extract or ergotine, but no fixed oil, and, consequently, is not poisonous. It is probable that it has been owing to the different degrees of maturity of the ergot, that the different effects, observed by certain authors, are to be attributed. It is also known that the ergot loses its virtue if it has been gathered more than a year, or if it is worm-eaten, has been exposed to the air, been roasted at too high a temperature, &c. It should only be reduced to powder when about to be used. 8th. It is more advantageous to give the ergot in small and repeated doses than in large ones which are often rejected by the stomach. An agreeable way of giving it is to suspend it in mucilage and add some aromatic syrup. We have already spoken of the manner of preparing an infusion by boiling water; the oil may be separated by decantation, and there remains the pure ergotine. The infusion may also be made with cold water. The decoction allowed to cool is little more than an infusion made in the warm way.

This interesting article concludes with several cases of uterine hemorrhage cured by means of the watery extract; and with a case of abundant sero-mucous discharge from the genital organs, in a girl three years of age, which had resisted all the ordinary means of treatment, but was cured by a single dose (60 centigrammes) of the powder infused in warm water, and then allowed to cool.—*Lond. and Ed. Month. Journ. Med. Sci.*, Aug. 1844, from *Giornale delle Scienze Mediche della Società Medico-Chirurgica di Torino*, in the *Annales de Thérapeutique*.

12. *Ipecacuan as a Counter-irritant*.—Dr. CORMACK detailed to the Medico-Chirurgical Society of Edinburgh the result of his hospital experience of ipeca-

cuan as a counter-irritant in the form of ointment, as recommended by Dr. Hannay, of Glasgow.* Dr. C. had tried the ipecacuan in a great many cases, and in the proportion of 10 to 12 of them, it had failed to produce any eruption, even when the powder was in the proportion of half an ounce to an ounce of lard. In a few persons only, with a delicate skin, or who had had recent blisters on the surface experimented on, did he succeed in bringing out an eruption. The eruption was vesicular in three cases which were carefully observed. In the same persons on whose skin the ointment produced no effect, a good crop of pustules was in every instance brought out by one, two or three frictions with a liniment of equal parts of olive and croton oil. Dr. C. believed that there were many vegetable powders which would be found more active counter-irritants than ipecacuan.

Dr. Handyside and Dr. Douglas MacLagan stated that they had met with no good results from its employment. Their experience corroborated that of Dr. C.—*Lond. and Ed. Month. Journ. Med. Sci.*, Aug. 1844.

13. *Arsenical Paste of Frère Côme*.—Arsenious acid is one of the best known caustics; it would certainly be preferred for cauterizing cancers, if its absorption were not to be dreaded. By employing it with care, nevertheless, and limiting its action, it may yet be usefully applied. Several receipts for arsenical caustic pastes are published in the *Formulaire* of M. Bouchardat; that of Frère Côme has lately attracted the attention of several surgeons. Frère Côme died without making known its composition: and M. Souberbielle, his relative and pupil, alone continued to make use of it with as much success as his master. M. Souberbielle communicated the formula to M. Manec, who applied the paste with very advantageous results. It is prepared in the following manner:—six grains of white arsenic, one gramme and ten grains of cinnabar, fourteen grains and a half of calcined sponge, powdered together. The proportion of arsenic is as from eleven to twelve to the hundred, and consequently stronger than in any known preparation, excepting that of Rousselot. When it is about to be used, the powder is mixed with a little water to the consistence of pap, and is then lightly spread over the ulcerated surfaces with a brush, care being taken to use only a small quantity, it being better to have recourse to repeated applications than to run the risk of considerable absorption. It is then covered with a piece of moistened agaric, which becomes detached at the end of ten, fifteen, twenty, or thirty days, sometimes later, and separates with the slough. After this separation has been effected, M. Souberbielle dresses the wound with the *yellow pomade of Frère Côme*, prepared as follows:—thirty-two grammes of yellow wax, forty-eight grammes of rose oil, seventy-five grammes of camphor, and one hundred and fifty grammes of Goulard's extract. This ointment is applied, spread upon linen, until the wound is cleansed of the whitish layer which covers it. If fungous excrescences should reappear afterwards, a renewed application of the paste is made, and repeated until the cancer is entirely destroyed. A very important remark is connected with the extent of the ulcer; if it exceeds three square centimetres, the treatment must be divided, in order not to risk absorption by too large a surface, and with that view not to cauterize a new portion until after the separation of the first slough. When the edges are callous, they must be stimulated by a blister, the caustic not acting except upon a moist and raw surface. M. Manec says he has ascertained by numerous experiments, that it is not necessary to remove the cancerous parts with a knife, before applying the arsenical paste, and that the diseased parts, whatever the thickness and depth of their roots may be, are specially and exclusively destroyed by the caustic, whilst the healthy parts are scarcely injured. M. Manec has also ascertained by experiments with Marsh's apparatus, that arsenic was absorbed in certain proportions, and that the urine yielded traces during a period varying from four to five days, according to whether absorption had been more or less rapid. The *fæces* have afforded traces of arsenic seven or eight days after the urine had ceased to yield any.—*Med. Times*, Sept. 1844, from *Bouchardat's Annuaire* for 1844.

* See No. of this Journal for Jan. 1844, p. 188.

14. *Prestat's Adhesive Plaster*.—The following composition is said never to crack, and not to inflame the skin:—Empl. diachyl. gum, four hundred grains, purified rosin, fifty grains; tereb. venet., thirty-eight grains, are mixed together at a gentle heat, and then twelve grains of gum mastich and twelve grains of gum ammoniac incorporated, and the mass spread on linen. In winter, it is advisable to add ten grains more turpentine and twelve grains of ol. amygdal.—*Ibid.*, from *Journ für Prakt. Chem.*

MEDICAL PATHOLOGY, AND THERAPEUTICS, AND PRACTICAL MEDICINE.

15. *Marsh Remittent Fever of the islands on the east coast of Africa*.—Dr. JAMES B. ALLEN gives, in the *Edinburgh Monthly Journal of Medical Science*, (Aug. 1841,) the following very interesting account of the form of remittent fever which prevails in Madagascar and the adjacent islands of the east coast of Africa. We transfer it to our pages, as it is, we conceive, a valuable contribution to our knowledge of febrile diseases.

The earliest diagnostic sign of this fever was invariably, he states, “a feeling of nausea, experienced on going out in the morning, continuing for three or four hours, but never exciting vomiting, and gradually subsiding into perfect ease and quiet, attended even by appetite for solid food. There was, at that period, no foulness of tongue, and the pulse only differed from the natural state, in being somewhat slow and hard. The delusive interval of health lasted usually from two to four hours, and was then disturbed by a slight return of nausea, with languor, inquietude, yawning, chilliness and thirst. Shortly the nausea again went off; but the other symptoms became confounded with heaviness of inspiration, a sense of tightness over the chest, headache, and intolerance of light, pain along the spine, especially in the lumbar region, and an uneasiness, amounting to pain, throughout the whole frame, which the most enduring tried in vain to soothe by constant change of posture. Now the pulse is about 90, hard and irregular, but not full; there is throbbing of the temporal and carotid arteries; the face is alternately pallid and flushed; the tongue, florid at first, is gradually taking on a dirty white coating; the bowels are rather constipated, and the urine is scanty and high-coloured. Towards night the chilliness is displaced by a burning feeling without and within; the temperature of the skin is 100° of Fahrenheit; the thirst is more insatiable; and every symptom is aggravated as night advances. Next morning occasional fits of vomiting come on; and about twenty-four hours after the first accession, sheer exhaustion apparently induces a remission, attended by a disturbed and easily broken sleep of four or six hours, with slight diaphoresis. As the second evening drew on, so did all the symptoms return with greater violence. The pulse varied from 100 to 120, though it was in other respects as on the first day; there was burning in the eyes; considerable deafness; increase of the heat of the skin to 103°; vomiting of coffee-ground-looking matter, of sour smell and bitter taste, continued at intervals, with pain in the precordia; and, in short, the second night was passed as the first, but with far greater suffering from heat, thirst and pain shooting through the head. With the third morning came another remission, with sleep, if it could be so called. At this time, however, in all fatal cases, the remission was suddenly changed and sleep ended, by the patient getting up, talking over ordinary matters, pitying the already dead or dying, and thankfully declaring that, except the thirsty feeling, he was as well as ever. By and by a desire to sleep was expressed; and out of that comatose slumber the patient never awakes. Some of the sufferers died in the act of drinking, others while relieving the bowels; and a few, wrangling about imaginary evils, suddenly expired. The fever, however, generally ends fatally in a comatose state, and the tranquillity preceding is deceptive only to the sufferer himself; for the pulse may be counted at 120 to 130, and sharp; the tongue is brown or black, and dry; the nares are dilated

on inspiration; the conjunctiva is often either red or yellow; there is a cold clammy sweat, hiccup, considerable mental irritability, and an unmeaning drunken look. Such was the course the disease took amongst the Europeans and natives at Foul Point, in December, 1830, in the French garrison of St. Mary's, during the sickly seasons of 1830-1-2, and at Zanzibar and the Comoros, in the reputedly healthy as well as sickly months. At Budderam, a fort three miles distant from Foul Point, upwards of 300 out of 1100 native soldiers died. In the French garrison of St. Mary's, at the periods mentioned, the mortality was one-third of the whole. Not ten per cent. of those attacked recovered; and the then commandant, M. Tauretto, showed that relief detachments from Bourbon were always calculated on that ratio. At Zanzibar, in November, 1832, the captain and forty men, belonging to a French corvette, were seized, and not one survived the third day. In Madagascar many died on the second day; but most commonly, young and old, spare and plethoric, black and white, were all hurried off on the third. It is deserving of notice, that all who slept on board ship escaped: every victim seen or heard of, had passed one night on shore; and no instance of recovery was known in those who were taken on board affected. The writer had a vessel of one hundred tons moored within the reef at Foul Point under his charge, mainly for the purpose of protection from sickness. Such as remained in her all night were quite healthy; but not one slept on shore with impunity. The same occurred everywhere else. There is, however, a fact still more worth mentioning; no man labouring under any form of dysentery or diarrhoea was attacked. This was first observed at Johanna in May, 1833. Two dysenteric seamen were encamped on shore, and three healthy men, envying their inactive life, escaped from the ship, and, together with some men from an American ship, slept two or three nights in the tent. The consequence was that all died of remittent except the two former. Several other instances were subsequently mentioned; and, at St. Mary's, exemptions of the same kind were quite common. It has been mentioned that, in all fatal cases, the third day's sleep was the precursor of death. In proceeding now to trace the signs of a favourable termination, we find that this day was also the critical one; and it was, therefore, anxiously watched. If the sleep alluded to remained unbroken for six or seven hours,—if the pulse fell to 90 or 100, becoming soft and full at the same time,—and if a sweat took place, unattended by any great reduction of temperature,—the patient was reckoned out of danger. On awaking, there was no desire to get up; indeed, weakness rendered that impossible. The intolerable thirst, headache, and every other bad symptom had ceased; and no ailment remained but an acute sense of hearing, giddiness on raising the head, and soreness in the muscles of the back and limbs, resembling what is felt after a long journey on foot. The acuteness of hearing spoken of here sometimes came on during the second day in those who recovered. It was very distressing for the first six weeks or two months of convalescence: and every wave that burst on the distant reef was counted with pain and even dread. It was astonishing to behold the change wrought in three days. The entire body was emaciated to an extreme degree; and the yellow complexion, hollow eyes, sunken cheeks, and decrepid countenance, made the invalid for a long time difficult of recognition. In most cases the hair either fell out or turned gray; the limbs continued long œdematous; in many the liver or spleen, or both, increased in size; and when at length health was regained, attacks of intermittent fever, on the slightest cause, for some years, rendered life a dear purchase, in spite of perfect security ever afterwards from a return of the original malady.* In concluding this account of the distinguishing features of fatal and favourable termination, a history may be given of such morbid appearances as it was in the writer's power, now and then, to observe, amidst opposing prejudices and other circumstances. As rapid decomposition renders interment necessary almost immediately after death, the few inspections made were very cursory. On opening the head, a clear or

* No instance could be learned in any place of the disease recurring, and Europeans and natives alike fearlessly calculated on this immunity.

whitish serous fluid was found in considerable quantity under the arachnoid, and a similar effusion presented itself in the ventricles. The vessels of the pia mater were well marked and black. The substance of the brain, when cut across, exhibited black points of blood, and, around the ventricles, it broke down before the knife, showing a degree of softening. The lungs, liver and spleen were engorged with dissolved black blood, and the two last organs were enlarged and dark, though of almost natural consistence. The pericardium was thought to contain more fluid than it ought, and the heart had assumed a black appearance. There was a dull redness of the inner coat of the aorta and *venæ cavæ*, which could with difficulty be removed by washing. The stomach and duodenum contained a quantity of chocolate-coloured matter, similar to, but of more consistence than what was vomited during life, and a greenish-brown bile, with which the gall-bladder was partially distended, was found in the duodenum. The mucous membrane of these parts was of a dark livid hue, thick, and soft enough to be easily removed by the nail. According to the distance from the stomach, so did the contents of the alimentary canal gradually darken, until, in the colon, the thin *feces* were quite black. Excepting a blush, such as might be expected where purgatives had been freely administered, there was no farther structural alteration in the tube; and neither kidneys nor bladder showed any thing remarkable.

"The foregoing marks of disease were seen alike in blacks and whites, and where no remedies had been employed as well as where all had been made use of.

"The medical treatment pursued at the commencement of the first sickly season at Foul Point, viz., in December, 1830, was remarkably unsuccessful, and, indeed, at no time afterwards had very much to boast of. As the disease was known only from report, no instructions had been given to apply immediately at its outset. Besides, the nausea was reckoned too trivial; and in the first Europeans seized, four in number, nothing was done until the fever was fairly developed. Aware of the value of the lancet in the tropics, and inferring it would be no less beneficial here than in the East and West Indies, venesection was employed freely and repeatedly in these four cases, as also in two others at the very beginning of the complaint. The early-drawn blood was dark and buffy, and relief was for the time procured. Purgatives of sulphates of soda and magnesia, castor and croton oil, and compound colocynth pills, with calomel, were administered, according to the condition of each patient's stomach. Soon, however, the paroxysm returned, and bleeding was again had recourse to. This time the blood was more dark and dissolved, and the second temporary relief appeared to be induced by an accumulated degree of debility, instead of any real diminution or abatement of the malady itself. In short, under these depleting and purging plans, three of the first taken ill died on the morning of the third day, and the other three lingered until the afternoon. Out of a party of nine Europeans at Foul Point, in the season mentioned, in eight of whom blood-letting had been carried to the extent of from forty to seventy ounces, only one recovered, he being the only one not bled at all. Abandoning the lancet, except in very plethoric subjects, another mode of cure was substituted, certainly as indiscriminately as the first, but not so universally useless. Believing that the early nausea might be a signal from the brain for relief through the stomach, the latter organ was cleared by antimonial solution. Permitting no early remission, vomiting was prolonged by diluents; the bowels were relieved at the same time with soap and water, by means of the pump; the hair was cut off, and a blister applied to the nape of the neck downwards, between the scapulæ; and, lastly, after the vomiting had subsided, fifteen grains of calomel, with one grain of opium, were exhibited. If, at the end of two hours, the stomach was not quieted, the calomel was increased to a scruple, and again given with the opium. Proper cooling and effervescing drinks, chiefly made from the lemon, which grew everywhere, allayed the thirst; and evaporating lotions were applied to the head. As soon as a purgative could be retained, one of those formerly mentioned, or jalap, was given with the calomel; and that the whole intestinal canal might be

speedily and effectually cleared, the operation was assisted by the enema pump, as before. Until the critical day had passed, the calomel, conjoined or not with opium, according to circumstances, was repeated every four hours in doses of ten, fifteen or twenty grains; and every eight hours, at farthest, free alvine evacuations were procured. In this manner quantities of thin, offensive, pitchy fæces were got rid of, the vomiting was arrested entirely, the thirst mitigated, the internal burning allayed; and although the headache continued severe, yet the shooting pain abated, and the first remission was rendered more decided as well as more prolonged. On the second day and night, Dover's powder and the warm bath were added to the remedial list. The first required caution; but when it excited vomiting, the matter was more bilious-looking, and soon got under by the calomel and opium, effervescing draughts, and the liberal use of the enema machine; but nothing afforded greater relief than the warm bath did on the second night. It was eagerly sought for, not only as a grateful antidote to every ill, but, as some said, "to die in comfortably."* By this time the headache had greatly abated; the pulse, though unaltered in frequency, was soft and regular, the skin was cooler by three or five degrees, of yellow tint in the face, and tending to transpiration. From the great local irritation caused by the blister, it was omitted in some instances; but as these omissions only proved further its efficacy in relieving the terrible head affections, it was persisted in and repeated afterwards, and the sore kept discharging by frequent renewals of the dressing. A piece of plantain leaf is the common dressing in the east, and surpasses every other by being cleanly, convenient, soothing and economical. When the sore is to be healed, the upper surface is to be applied; if not, the lower. Up to the decisive remission on the third day, this curative plan was persevered in, and, even after a favourable termination, it was not relinquished for some days, although the mercury rarely produced its constitutional effects. Contrasted with it, the method of depletion was sadly inferior at all stages. The effects of the more eligible practice thus summarily detailed were very uniform in all the different islands. In proceeding to state the rate of mortality, it must be observed that the calculation, as affecting natives only, applies to those of Madagascar, time and opportunity being wanting to gain information amongst the others. In 1830-1-2, out of ten Europeans, four only recovered, and these were men of more regular habits. With one exception, every grog-drinker died; and not one survived, if taken on board ship at any period of the complaint, whatever were his habits and temperament. The total number of sick during these three years, from Tamatave to Wohemar, was computed at one hundred and twenty. Amongst the natives, out of some hundreds treated, more than fifty per cent. recovered. It was calculated that about three hundred in every one thousand were attacked, and this great immunity (whilst not one European who slept on shore escaped, unless he was, as already stated, affected with dysentery or diarrhœa,) can only, as in other countries, be attributed to acclimatization. At St. Mary's, where blood-letting, blistering on arms and legs, kermes mineral, tisanes and lavements were trusted to, it has been stated that recoveries were ten per cent. Amongst the native population of that island, also those of the Madagascar main, from Tamatave northwards, who, under their own care, did nothing but drink burnt rice-water, and drench themselves with castor oil and infusions of glycyrrhiza, the proportion differed little or none. At Foul Point, where venesection was pursued, every man died; so also, as related, did forty-one men belonging to the French corvette at Zanzibar, treated on the same plan as their countrymen at St. Mary's. Many similar instances of whole-

* No little difficulty was met with in getting a vessel suitable for the purpose. A canoe was first tried, but was soon relinquished for the native bath. This was simply a bullock's hide newly flayed, attached by the corners to bamboos, so as to hang loose in the middle. It was very comfortable, and easily renewed where cattle sold for five dollars a head. Travellers improve their account of this kind of bath, by saying that the sick of some countries to the eastward are immersed in the still living entrails of the animal.

sale mortality could be adduced, but they correspond so exactly in the aggregate with those already mentioned, that they need not be gone into.

16. *Intermittent Insanity*.—M. BALLOTTA relates, in the *Bulletino delle Scienze Mediche*, 1843, a case of mania which had continued seven months—presenting a perfect tertian type. The patient was a female, forty-five years of age, who was attacked with encephalitis, caused by severe mental anxiety and exposure of several hours to a burning July sun, and which continued seventeen days, endangering her life. Convalescence became established on the 18th day, and she ate and talked with her family as usual. The 19th day she was attacked with acute mania, which continued until evening, when she became calm, ate with good appetite and slept well. The 20th she was perfectly well and tranquil all day; but, on the 21st day, there was a repetition of the scene of the 19th day. From this time up to the 11th April, 1843, when Dr. B. reported the case, the same condition of things continued. Quinine, and all other remedies, had failed to arrest the return of the paroxysms.

17. *Deaf and Dumb Child restored after the discharge of Worms*.—Dr. SCHLEIFER relates, in the *Oesterreichische Medicinische Wochenschrift*, the case of a child 9 years of age who became deaf and dumb after suffering in early life from cutaneous eruptions, engorgement of the glands, &c. The loss of hearing was attributed principally to a fall and treated accordingly. The child became meagre and pale, dark around the eyes, the muscles of the face were in constant motion, the tongue white and loaded, breath offensive, constantly moaning, abdomen large and hard. Dr. S., suspecting worms, treated the child accordingly. In three weeks the child passed 87 lumbrici, and innumerable ascarides during five weeks, and at the end of the sixth week the patient had recovered hearing and speech.

18. *On the motive for the Scarification of the Gums during dentition*.—Dr. MARSHALL HALL says that there is no practical fact, of the truth and value of which he is more satisfied than that of the effect and efficacy of scarification of the gums in infants, and not in infants only, but in children. "The process of teething," he observes, "is one of augmented arterial action and of vascular action generally; but it is also one of augmented nervous action; for formation, like nutrition, secretion, &c., generally, is always one of nervi-vascular action, and of this the case in question is, from its peculiar rapidity, one of the most energetic. Like other physiological processes, it is apt to become, from that very character of energy, pathological, or of morbid activity. It is obviously, then, attended with extreme suffering to the little patient; the brain is irritable, and the child is restless and cross; the gums are tumid and heated; there is fever, an affection of the general vascular system, and there are, too frequently, convulsions of various degrees and kinds, manifested in the muscles which move the eyeball, the thumb and finger, the toes; the larynx, the parietes of the respiratory cavities; and the limbs and frame in general, affections of the excito-motor part of the nervous system, and of the secretions of the liver, kidneys and intestines, affections of the ganglionic division of that system.

"What is the precise cause and source of these formidable effects? Can the mere tension and irritation of the gum situated over the more prominent part of the teeth be the cause of such extensive morbid actions? I think not. The real source of these phenomena is in the entire dental system, in which actions of unusual energy and extent are going on,—sub-inflammatory they might be called, were they not, in reality, of an essentially different nature and origin. This undue action takes place in the fangs and sockets of the teeth in their whole extent, with their connections, vascular, nervous and membranous. But the focus from which the *nervous* actions emanate is, I believe, not as is generally imagined, the nerves of the mere *gums* seated over the prominent parts of the teeth, but the nerves which may be emphatically termed *the nerves of the teeth themselves*, the nerves which enter into the very fangs and substance of the teeth.

"It is to the base of the gums, not to their apex merely, that the scarification should be applied. The most marked case in which I have observed the instant good effect of scarification was one in which all the teeth had pierced the gums!"

"This view of the subject may assist in removing the futile objections of some who have, without due consideration I am convinced, opposed my plan of frequent, often daily, scarification of the gums, to whom I would say, as my sole reply,—Better scarify the gums *unnecessarily* one hundred times than allow the accession of one fit or convulsion from the neglect of this operation, which is equally important in its results and trifling in its character.

"And it is not merely the prominent and tense gum over the edges of the teeth which should be divided; the gums, or rather the blood-vessels, immediately over the very *nerves of the teeth*, should be scarified and divided, as you would divide the vessels of the conjunctiva in inflammation of that membrane.

"Now, whilst there is fever or restlessness, or tendency to spasm or convulsion, this *local blood-letting* should be repeated daily, and in urgent cases even twice a day. I would here repeat my maxim,—Better do this one hundred times unnecessarily than have one single fit from the neglect of so trifling an operation. A skilful person does it in a minute, and in a minute often prevents a most serious attack,—an attack which may cripple the mind or limbs, or even take the life of our little patient, if frequently repeated. There is, in fact, no comparison between the means and the end, the one so trifling, the other so momentous."—*Lancet*, May 18, 1844.

19. *Counter-irritants*.—The following rules derived from the tone and frequency of the pulse are suggested by Mr. Atkinson, of Westminster, for the application of counter-irritants, and are stated to be derived from the physiological law:—The greater the irritability of the constitution the greater will be the sensibility of the cutaneous surface. His observations chiefly apply to the time required for the production of the full therapeutic action of this class of remedies. If the pulse is turbulent, wiry and frequent, as from 100 to 170, from ten minutes to half an hour's application will do; if from 80 to 100, small and wiry, then from a quarter of an hour to two hours may suffice. In both these states of the pulse, if the skin is moist, a longer time will be required. In a slow pulse, under 70 in a minute, when there is some degree of softness accompanying it, from twenty to forty hours, on an average, may be safely relied on, as not being too long for full effects. We select the following cases as illustrative of the preceding remarks:—

Case 1. J. C., aged sixteen years, was suddenly attacked with typhus, and the ordinary remedies were administered. During the progress of the disease it was found necessary to have recourse to blisters and sinapisms to relieve the cerebral congestion commonly present in typhus. At this stage of disease the pulse was irregularly quick, wiry, and numbered about 150; a blister was applied to the nape of the neck, and sinapisms to the calves of the legs. The former vesicated satisfactorily in a quarter of an hour; the latter could not be endured longer than five minutes.

Case 5. A child, aged one year and six months, had suffered under congestive pneumonia; pulse 170. A blister was applied over the sternum, which had the wished-for effect within a quarter of an hour.

Case 7. A lady, aged sixty-three, who had for the last twenty years laboured under a bronchial affection, with profuse expectoration, at different seasons of the year, became a sufferer from influenza. Her pulse was small and wiry, average 130. It was thought advisable to apply a sinapism to the chest; it could not be endured more than ten minutes. A week after this, through the abatement of the disease, the pulse became lower, softer, and hardly increased to 76, and the poultices were re-applied, when it became clearly evident that they could be endured with impunity for more than half an hour.

Case 10. M. C., aged twenty-six, was suffering from chronic rheumatism in the right arm and shoulder. A blister had been applied over the part affected. The pulse was weak and small, not exceeding 68 beats in a minute. It was

directed to be removed after the expiration of thirty hours, and being attended to at the period mentioned, the vesication was complete without rupture of the cuticle.—*Lancet*.

Mr. Atkinson gives short notes of ten cases, the results of which we have thrown together in a tabular form, arranging the cases according to the frequency of the pulse.

	Age.	Disease.	P.	Blister.	Sinapism.
4 Infant	7 m.	Convulsion	rapid		2 min.
5 Child	18 m.	Pneumonia	170	15 min.	
1 J. C. M.	16	Typhus	150	15 min.	5 min.
7 Female	63	Influenza	130		10 min.
9 S. A.	19	Fever	130	5 hours	
8 Male	25	Bilious Fever	90	8 hours	
7 Female	63	Influenza	76		30 min.
10 M. C.	26	Chr. Rheum.	68	30 hours	
2 Male	18	Influenza	65		1½ to 2 hrs.
3 Male	62	Hemiplegia	62		2 hours

Prov. Med. and Surg. Journ., June 12, 1844.

20. *Savin in Menorrhagia*.—Some observations on the employment of the *Juniperus Sabina* in hemorrhage from the uterus have been made by M. Aran, from which it would seem to be occasionally a powerful agent in checking these discharges. Much has been said on the properties of savin, as an emmenagogue, and on the effects of this drug in causing abortion, and considerable difference of opinion as to its powers and mode of action would seem to exist amongst competent authorities, some of which have recently been referred to and quoted by Dr. Shapter, in this Journal. Several foreign authors, however, and among them, Wedekind, Gunther and Sauter, disregard altogether its supposed tendency to cause uterine hemorrhage, and on the contrary recommend its use in cases of this description.

M. Sauter says, that savin is one of the most powerful curative means, not only in menorrhagia, and other diseases in the non-parturient, designated by the terms atony, asthenia, debility, defect of contractility or cohesive force, but also in those hemorrhages which threaten abortion, occurring in pregnant women, who, from debility, have already had several miscarriages. He states that in these cases he has given the powder of savin, in doses of from 15 to 20 grains, three times a day, during three, four and five months, and that he has, in this manner, frequently succeeded in arresting the hemorrhage and preventing abortion, the infants being born healthy at the full period.

The following cases, among others, are mentioned by M. Aran:—

A worker in embroidery, aged 33, under the care of M. Gendrin, at the Hotel Dieu, had been recently delivered of a child, and since her confinement had suffered from attacks of menorrhagia returning at irregular intervals. She was much weakened and her general health had begun to deteriorate. The neck of the uterus was neither swollen nor painful; but a soft elastic circumscribed tumour could be felt projecting before the anterior fold of the vagina. Powdered savin was administered, and in two days the hemorrhage ceased, and the uterus was restored to its healthy condition.

A woman, aged 28, also a patient of M. Gendrin, had suffered from menorrhagia for eight months, almost continually, but without uterine disease. Savin was administered, and on the third day the hemorrhage was arrested. About six weeks afterwards it returned; the uterus was now somewhat swollen, and sensitive to the touch. She was bled from the arm and the savin again given. The hemorrhage immediately ceased.

A lady, of a bilious-sanguine temperament, and robust constitution, was attacked with menorrhagia after a fatiguing walk. The hemorrhage was neglected and had lasted for three days, when M. Aran was called in. He found her in bed, with the countenance excited, the mouth dry and complaining of urgent thirst, and of dragging pains in the hypogastric region, which was tender on

pressure; the hemorrhage still continuing, although not very copious. The horizontal position, cold to the hypogastrium, and a bleeding from the arm were ordered. The bleeding was followed by great relief, the menorrhagia was stopped, and the patient, thinking herself cured, returned to her avocation. The same evening the hemorrhage reappeared; bleeding could not be again had recourse to, and one gramme and a quarter of savin was immediately given in three doses. On the following day the menorrhagia had completely ceased; and, notwithstanding that the patient would not remain in bed, did not again appear.

A young married lady, a blonde and of lymphatic temperament, was attacked at the catamenial period with profuse hemorrhage, which continued for eight days. M. Aran found her with no symptoms of deranged health, with the exception that she was somewhat pale. Three doses of savin, of forty centigrammes each, were administered at intervals of two hours. The following day the hemorrhage had almost ceased, and another dose of the savin entirely put a stop to it.—*Ibid.*, from *Gaz. Méd. de Paris*.

21. *Ossification and Obliteration of the Vena Portæ.* By Prof. GINTRAC.—A man, forty-five years of age, an old retired soldier, but employed in teaching recruits, two years ago was treated for palpitations and difficult respiration, and abdominal dropsy. He was then only partially relieved; all his symptoms remaining more or less. On the 10th of June he was admitted into the Hospital St. André, when he presented the following symptoms:—Dyspnœa, increased on walking; strong tumultuous action of the heart, with distinct *bruit de soufflet* and slight *bruit de raphe* over the sternal region. Pulse calm, but full. Tongue dry, and red on the margins and tip, but covered on the centre with a brown fur. Abdomen distended, tympanitic in the centre, dull, and with distinct fluctuation at the sides. Gums bleeding, but not livid; epistaxis, thirst, anorexia, headache, &c. He died in a few days.

The cellular tissue was generally infiltrated with a serous fluid. The heart was large. The aorta, at its origin, and for nearly the half of its extent, had a mottled appearance, consisting of reddish spots, rounded white projecting spots of a cartilaginous consistence, and of others which had a pustular aspect. The peritoneal cavity, otherwise healthy in appearance, contained several pounds of liquid serum. The liver was pale or whitish, and irregularly wrinkled or mammillated on its surface. The gall-bladder contained a medium quantity of somewhat thickish yellow bile. The biliary ducts had a normal disposition. The *vena portæ*, above the junction of the splenic and superior mesenteric veins, was filled completely by an old clot which adhered to the inner membrane. The clot was solid, and of a pretty deep black colour. At the same part of the vein several osseous plates were observed several lines in diameter. They were placed between the inner and middle coats of the vein, but had but little adhesion to either. All the abdominal veins which ended in these vessels were gorged with blood, and were varicose.

Professor Gintrac attributed the ascites to the obliteration and ossification of the *vena portæ*, and considered that this case proved, that though obliteration of that vessel probably modified the secretion of the bile, it did not prevent it altogether, but that it materially interfered with the nutrition of the liver. The blood of the *vena portæ*, he hence infers, contributed to the nutrition of the liver, but is not indispensable to the secretion of bile.—*Ed. Med. & Surg. Journ.*, from *Journal de Méd. de Bordeaux*, Jan. 1844.

22. *Succinate of Ammonia—a remedy for Delirium Tremens.*—M. SCHARN has successfully employed the succinate of ammonia for the cure of delirium tremens. The most furious delirium is quieted by the remedy as if by magic, and the disease cured by it in a few hours without the aid of any other medicine.—*Journ. de Pharm.*, March, 1844.

23. *Rupture of the Heart.*—Mr. NASON forwarded to the Birmingham Patholo-

gical Society a specimen of rupture of the heart. The ruptures, three in number, are situated in the middle of the anterior face of the left ventricle. The one above, the largest, extends downwards and outwards, has very irregular and ragged edges, and is capable of admitting the points of the first two fingers. The middle one is situated below the inner termination and on a level with the outer termination of the rupture just described; it is capable of admitting a goose-quill. Underneath these is situated the third rupture, which is large enough to admit the point of the middle finger; its edges also are ragged and irregular.

The parietes of the ventricle are soft and flabby, and very much thinned, especially anteriorly; the aortic valves healthy, but puckered; the lining membrane of the aorta studded with atheromatous deposit. The coronary arteries arise as usual; the descending branch of the left coronary, as it passes down along the line of the septum of the ventricles, towards the apex of the heart anteriorly, is obliterated by ossification; all the other branches of the coronary arteries are healthy. The right auricle, the tricuspid valves, and the right ventricle, are healthy.

Mr. Nason says, "The man was seventy-two years old, very lame from attacks of sciatica or chronic rheumatism of the hip-joint. About three years before his death, I saw him with inflamed and œdematous legs, which yielded to diuretic medicine. He never complained of any affection of the chest, or difficulty of breathing. The day before he died, he told his wife he felt pain in the left side of the thorax. The following day, about noon, he walked a few yards from the door, and dropped down and died in a moment. On a post-mortem examination, the viscera in the abdomen were healthy, as also those of the chest, with the exception of the heart. The pericardium was completely filled with black blood, partly coagulated. I fancy my fingers made the lower opening in drawing it out, so as to divide the vessels as high as I could. There is no doubt the upper opening was a rent, from the thin and softened state of the parts, and that it gave way at the moment of the man's death. Is it not rather strange to find disease of so extensive a nature without any striking symptoms during life?"—*Prov. Med. & Surg. Journ.*, Aug. 7, 1844.

24. *Of the Nature and Treatment of Aphthæ.*—Next to the induration of the cellular tissue, the disease which carries off the greatest number of newly-born children in the foundling hospitals is thrush. Hitherto we have been entirely ignorant of the cause and nature of this serious disease. The greater number of pathologists saw in aphthæ only a pseudo-membranous production consecutive on an idiopathic inflammation. With others it was a symptomatic inflammation. Neither were medical men agreed as to its mode of transmission; some regarded it as contagious, while others formally denied that it was so. According to the researches of M. Gruby, thrush is produced by the development of a cryptogamic plant.

Aphthæ present themselves in the form of white masses, covering the whole of the mucous membrane of the mouth, and extending sometimes into the pharynx, œsophagus, stomach and small intestines. The commencement of the disease is characterized by small, conical, whitish elevations, twenty-five millimetres in diameter, dispersed over the mucous membrane of the mouth; these elevations soon increase in size, and extend rapidly in the form of a pseudo-membrane strongly adherent to the subjacent tissue, from two to three millimetres thick, and covering sometimes the whole extent of the alimentary canal. A portion of this substance, examined under the microscope, is found to be wholly composed of a collection of cryptogamic plants. The roots are implanted in the cellules of the epithelium; they are cylindrical, transparent, and about 1-480th of a millimetre in diameter; during the development they perforate the entire series of cellules which compose the epithelium, to arrive at the free surface of the mucous membrane. The stems, which spring from the surface of the epithelium, are equally transparent, are divided at certain distances by septa, and contain corpuscles in their interior; they are cylindrical, straight, about one-fourth of a millimetre in length, and 1-400th of a millimetre in width; the stems

are divided into branches, which are again subdivided, bifurcating at an acute angle. These branches are composed of very distinct oblong cellules, containing one, two or three round and transparent nuclei; their lateral parts have sporules here and there, and their ends especially have a great number. The diameter of these sporules is from 1-200th to 1-500th of a millimetre.

These cryptogamic plants have considerable analogy with the sporotrichium described by some botanists. As they are very fragile, they become detached by the movements of the organs lined by the mucous membrane, and becoming mingled with the food, are carried into the alimentary canal, of which they afterwards cover a considerable extent. Those children in whom this extension of disease takes place very largely, fall into marasmus, and soon die. As M. Gruby has constantly found in the white substance of aphthæ only these plants and the cellules of the epithelium, and never any production of inflammation, he deems himself authorized to conclude that thrush is nothing else than a cryptogamic plant vegetating on the living mucous membrane.

M. Trousseau employs the following collutory successfully in the treatment of thrush:—One gramme of hydrochloric acid, ten grammes of honey. He also recommends the following application:—Equal parts of finely-powdered borax and honey mixed together.—*Med. Times*, from *Bouchardat's Annuaire de Thérapeutique* for 1844.

25. *On Pain of the Loins.*—By W. S. OKE, M. D., of Southampton.—Perhaps there is no symptom more commonly met with in practice than pain of the loins, which is usually and at once attributed to bile, gravel or rheumatism; but as it may be also derived from other causes left out in a hasty decision, I shall enumerate them, and endeavour to point out the symptoms by which each may be distinguished.

Pain of the loins may be derived from the muscles, from the liver, from the duodenum, from the kidneys, from the colon, from the uterus, from the aorta, from the spine, or from matter collected on the psoas muscle independent of spinal disease.

In order to arrive at its true cause, we must endeavour to ascertain what function is principally involved, which will at once lead us to it.

If the pain be rheumatic, it will be increased by pressure, and by the slightest action of the muscles affected. There will probably be also rheumatism in other parts of the body, the system will not evince much disorder, the urine will be high-coloured and deposit a lateritious sediment.

If derived from the hepatic function, the pain will shoot upwards along the splanchnic nerves to the scapulæ; the alvine evacuations will be either deficient in, or exuberant with, bile; or show a morbid quality of that secretion; the urine will have a bilious tinge; there may be congestion of the hæmorrhoidal veins; and the spirits will be depressed.

If from the duodenal function, three or four hours after a meal the pain will be aggravated, shooting through towards the right side of the abdomen and remaining till the food has passed into the jejunum. Dyspeptic symptoms will prevail, and there will frequently be painful pustules breaking out about the face. I have lately met with a case in which the boils were extremely annoying.

If from the kidneys, the pain will shoot down the course of the spermatic nerves towards the round ligament in the female and towards the testis in the male, which will often be retracted by the action of the spermatic nerves upon the cremaster muscle. There will be more or less irritation communicated to the mucous membrane of the bladder. The urine also will be diagnostic in this instance; it may deposit mucus, calculous matter, blood, pus or albumen, according to the nature of the case; or it may be otherwise morbid in its constitution.

If from the uterus, the pain of the back will arise either from disordered function or disease of that organ. In the former case the pain will be of a neuralgic character, will return in forcing paroxysms extending around the hips and hypogastric region, will be attended with hysteria, and often with increased quantity of the menstrual discharge. In the latter case the pain will be *constant* and

severe, extending along the anterior crural nerve half way down the thighs. There will be a thin, offensive discharge from the vagina. The countenance will be wan and sallow, exhibiting the wear and tear of organic lesion.

If from the colon, there will be constipation and inflation in the course of the bowel, or the fæcal discharges will be of small diameter, or there will be soreness of the intestine under pressure, especially at its ascending or descending portions, accompanied by mucus, or shreds of lymph in the form of boiled vermicelli, amongst the excretions.

If from arterial dilatation, an abnormal pulsation of the vessel involved—the aorta, for instance—may possibly be detected by auscultation in the incipient stage of the disease, *if such were suspected*; but in a large majority of cases such a cause may reasonably escape the attention of the ablest surgeon, from there being no tangible symptom that might lead him to suspect it; and even after the dilatation has considerably advanced, it may be sufficiently large to press upon and disturb the spermatic nerves, but not large enough to project and pulsate externally, and this may, at this stage, be confounded with disease of the renal function.

A few years ago I met with a case of this kind in a man of middle age. The pain had been constant and wearing, shooting from the loins down the course of the spermatic nerves, and for a considerable time was reasonably attributed to the renal function, especially as there had been constant disturbance of this function. At length the aneurismal sac began to approach the surface and then, of course, the cause became apparent.

If from disease of the spinal column, the pain will be aggravated by percussing the spinous processes at this part of the spine, or by suddenly striking the toes against an uneven surface. There will be involuntary action of the muscles, especially of the flexors of the legs, diminished temperature, abnormal feelings, and more or less loss of power of the lower limbs. Should there be at the same time any unnatural projection of the spinous processes, the disease will be confirmed.

If from a collection of matter upon the psoas muscle, unconnected with spinal disease, the pain will be continued, dull and deep-seated, extending from the loins down the psoæ, or in whatever direction the matter may have taken its course. The pain will be aggravated by flexing the thigh towards the abdomen, and there will be difficulty in walking; moreover, there will be marks of a strumous habit and more or less symptoms of hectic fever. Should any fluctuating tumour present at the groin, or at any other point where the matter may find its way out of the body, it will be conclusive as to the nature of the case.—*Prov. Med. Journ.*, Feb. 17, 1844.

26. *On the Treatment of Articular Rheumatism, by Tincture of Colchicum, Nitre and Blood-letting*.—Dr. E. MONNERET has made some interesting observations on these points of practice, which deserve the serious consideration of the profession. Having shown, in a preceding paper, that the sulphate of quinine had no title to rank as a therapeutical agent in rheumatism of efficacy superior to many others, he now proceeds to test the value of the articles indicated above.

Twenty-five patients were treated by the tincture of the colchicum root, eight by nitre, and nineteen by copious blood-letting.

The energy of the preparation of colchicum was first ascertained—it was very powerful. The greater number of the patients took from four to sixteen grammes (one drachm to four drachms) in the course of the twenty-four hours, in one, two, or four divided doses. No smaller dose than a drachm was ever administered, and several of the patients took it for seven, some for ten, and others for thirteen days. The medicine was not discontinued in any case until it was ascertained to have no effect upon the disease.

In eight of the patients, the diminution, or even total disappearance of the symptoms of rheumatism, coincided with the exhibition of the tincture of colchicum. The rheumatism in these cases was either of some days' duration, and was scarcely accompanied with febrile symptoms, and then ended in twelve or

fourteen days, or it was completely chronic. In either case the powerful revulsion produced by the tincture of colchicum on the bowels sufficed to suspend or to expel the disease: the improvement always coincided with the diarrhœa. In no case did the tincture of colchicum produce amendment or cure of rheumatism by any of those specific and occult properties which have been recognized in it by certain writers. In a few rare cases where its action was beneficial and rapid, it operated as a true drastic purgative. With regard to any complications which existed with the disease on the side of the heart, M. Monneret observes that it is scarcely needful for him to say that they were in nowise modified by the tincture of colchicum. If the effects of this medicine upon rheumatism, then, are nil in fact, which seems quite certain, it is much otherwise in so far as the abdominal viscera are concerned. Upon this point considerable difference of opinion appears to prevail: some say the colchicum occasions no intestinal disturbance, and that it does not purge; others maintain that it abates the pulse in force and frequency; and almost all unite in lauding its effects in rheumatism, &c. I have watched its influence in a sufficient number of instances, says M. Monneret, to have no hesitation in stating exactly what I have seen. In twenty-five patients to whom the tincture of colchicum was administered, I observed but a single order of phenomena at all referable to the gastro-intestinal system. The most remarkable among them were nausea and vomiting, diarrhœa, colic pains, and borborygmi, and the whole of these effects almost immediately followed the exhibition of the medicine in large doses, and for a certain time. In other instances, diarrhœa was the prevailing feature—there was little sickness or vomiting, but the alvine evacuations were copious and repeated. In a third and very small class the chief complaint was of nausea and vomiting without any purging.

The sickness supervened either immediately after taking the draught, or at some longer or shorter interval during the day or night. The discharges were almost always bilious, or evidently mixed with bile. The diarrhœa was generally in proportion to the dose; from one to two drachms of the tincture were followed by from two to twenty evacuations in the course of the twenty-four hours. The motions were mostly passed with acute suffering, violent colic pains in the bowels, tenesmus, and scalding of the anus. The matters passed were at first semi-fluid, but by and by they consisted in great part of a yellow and evidently bilious serum, in which floated a large quantity of whitish grains in form and colour like the ova of a fish's roe; there was also mixed with them a quantity of red matter like scrapings of meat, and some blood more or less mixed with mucus.

Vomiting was scarcely induced by a smaller dose of the tincture than from two to four drachms in a draught; it will not follow one drachm, two drachms, or even three drachms administered in a large quantity of tisan. Several elements enter into the consideration of the therapeutical effects of medicines: the dose, the mode of administration, and the intervals of repetition. The effects of remedies are signally different from those generally seen when they are given in large and closely repeated doses. Three drachms of tincture of colchicum in two doses, one close upon the other, produce effects which are not only more energetic, but also different from those generally witnessed.

It is obvious, therefore, that colchicum in tincture exerts its agency especially upon the bowels. Of what nature is this agency? The diarrhœa, the dysenterical character of the stools, the severe griping which follows its exhibition, do not continue as in cases in which the intestinal mucous membrane is truly inflamed; its effect is mainly to alter the secreting faculty of the intestines—the fluids habitually poured out are increased in quantity, and changed in quality.

Colchicum appears to have no effect upon the urinary secretion; and must, therefore, be rased from the number of diuretics.

Blood-letting.—In nineteen cases of acute articular rheumatism, desiring to ascertain the effects of a somewhat energetic antiphlogistic treatment, the patients were bled at least three times each in the course of the four first days, and cupping was further had recourse to around the affected joints, or to the region

of the heart: only in two of the cases were tartar emetic and digitalis exhibited simultaneously. The quantity of blood abstracted was considerable,—large; and the venesections were repeated at short intervals. The mean stay in hospital of the patients thus treated was fourteen days—about the same as when other plans of treatment were employed.

The effect of the blood-letting on the disease can always be judged of by the state of the pulse: if it becomes less frequent, and loses force and volume, and if the temperature of the surface at the same time declines, the disease will end; if the pulse continues frequent, the disease is not yet at its conclusion. Sometimes the pulse falls suddenly after the first or second bleeding and the disease appears about to be subdued; but it soon rises again to its old number, and matters go on as if there had been no prospect of amendment: the gradual and enduring fall of the pulse is the best sign of improvement; if it falls from six to twelve beats below its usual number, so much the better.

When the symptoms are not relieved by the blood-letting within the first four or five days of the invasion of the disease, it is vain persisting in the abstraction of blood; the practice then is only injurious; bellows murmurs are set up in the heart and great vessels, the surface becomes drenched in sweat, the sleep is disturbed, the pulse is rapid, and the pains, far from diminishing, flit about from one joint to another, or remain obstinately fixed in those that were first attacked. The conclusion, on the whole, in regard to blood-letting is that in moderation it is useful, especially when practised early in the disease, within the first four days; after this, depletion by the lancet only reduces the patient, and renders his recovery more difficult.

Nitre.—Eight patients only were treated with nitre, and of the number one was affected with meningitis cerebro-spinalis, another with pneumonia. In all the rheumatism was recent and severe. The medicine was administered in doses of from eight to thirty grammes (two to seven and a half drachms) dissolved in tisan. Its influence appeared to be absolutely nil in the whole of the cases. The pains in the joints, the signs of endocarditis, underwent no kind of diminution under its influence. The pulse was not lowered, the febrile heat was not lessened by it. The quantity of urine passed in the twenty-four hours was not increased. In order to control the disease it was necessary, in every case, to have recourse to other means.—*Lond. Med. Gaz.*, May, 1844, from *Archives Générales*, March, 1844.

27. *Paralysis of the Œsophagus followed by Hemiplegia, cured by Electro-magnetism.*—We extract the following notice of a case of Dr. SHEARMAN's, from an interesting summary by Mr. Law, of the Scientific Transactions of the Sheffield Medical Society, in the *Prov. Med. and Surg. Journ.*, (May 15, 1844.)

“The patient, a lady, was fifty-one years of age, and had suffered for some months from tic douloureux of the right inferior maxillary nerve. On January 31, 1841, she was suddenly seized with an extraordinary attack of vomiting. She fainted, and had loss of power over the arms when in the upright, but not when in the recumbent posture. On the evening of the 1st of February, she found it impossible to swallow any thing, and the sickness subsided. There were no symptoms of inflammatory action. Subsequently she had paralysis of the left side of the face, and of the right arm and leg. The patient became exceedingly feeble, and neither external nor internal stimulants had any effect. Dr. Shearman treated the case as he would have done if it had been one of palsy, succeeding a slight fit of apoplexy. Nothing could be introduced into the stomach except through the Œsophagus tube. On the 25th of February, electro-magnetism was applied, with the sanction of Sir A. J. Knight, to the back of the neck and chest in the course of the Œsophagus, to the left side of the face, and from the spine in the course of the nerves to the right arm and leg. This was done one hour at least three times a day for a month, and afterwards twice a day. The nutritious and stimulating injections into the stomach were continued until March 9th, when she could swallow so well that the Œsophagus tube was unnecessary. Pretty good doses of quinine, and other stimulating

tonics, in the way of nourishment, were administered; and great attention was paid to the digestive organs. On the 26th of June she could walk up and down stairs tolerably well. From this time, the electro-magnetism was gradually discontinued. She got quite well, and is so at this moment.

"This is clearly a very rare case. While it was going on, Sir A. J. Knight and Dr. Shearman consulted all the authorities within their reach without obtaining any information respecting it. Dr. Shearman referred the case to Dr. Abercrombie, who acknowledged that he was quite at a loss with regard to the state of the spinal cord. There can be no doubt that in this case there was no structural disease. This seemed to be the general opinion of the society. With respect to treatment, the writer doubts whether the electro-magnetism is entitled to the credit of having effected the cure; or whether this should be attributed to the quinine, stimulating tonics, and the great attention which was paid to the digestive organs. Paralysis occasionally terminates favourably quite irrespectively of medical treatment, and the acknowledged obscurity in which the proximate cause, in the case under consideration, was involved, demands especial caution in assigning to each of the various means employed in the treatment, its due share of credit. It is by no means impossible, that the electro-magnetism, instead of having carried off the complaint, retarded the cure; and that this was ultimately accomplished by nature, assisted by the general treatment. Until a series of cases treated with, have been contrasted with a parallel series treated without electro-magnetism, it would be unphilosophical to pronounce a decided opinion on this principle as a curative agent in paralysis. Although the writer has employed electro-magnetism in a variety of cases, during the last twelve months, yet he has hardly been able to verify a single observation of any one of its numerous and zealous advocates. Dr. Shearman used either the negative or positive pole, as chance directed. Now Ritter asserts that the former diminishes, while the latter augments the powers of life, and J. D. Humphreys, medical galvanist, with Chas. Woodward and others, says that the positive pole exerts a salutary influence, by exhilarating the spirits, and infusing feelings of energy and strength; while the negative excites a sense of exhaustion and of irritation. These writers distinctly state that the only effect of the negative pole, if applied to the seat of a disease, would be to aggravate its worst symptoms. How are these opinions to be reconciled with Dr. Shearman's belief, that he had cured his patient by an indiscriminate use of the oxidating and deoxidating electricities?

"Dr. Wilkinson, Dr. Hodgkin, Mr. Ware and Mr. Carpus ascribe wonderful power to electro-magnetism in diseases affecting respiration, circulation, digestion and secretion. According to these gentlemen, there is hardly a complaint which it will not either cure or relieve; or an indication in therapeutics which it will not satisfactorily fulfil. The writer can reconcile the discrepancies between the statements of authors and his own experience only by supposing that the publications on this subject contain many errors. With respect, however, to the case under consideration, it is right to say the society generally agreed with Dr. Shearman, in ascribing the cure to electro-magnetism; and that Dr. Abercrombie speaks rather favourably of this agent."

28. *Bronchocele*.—Dr. B. R. MORRIS calls attention to rheumatism as an occasional cause of goitre, and relates three cases of the disease which he attributes to that cause. In one of these cases a cure was effected by the use of half a drachm of hydriodate of potass in an ounce of soap liniment, rubbed into the tumour every night.—*L. and E. Month. J. Med. Sc.*, Aug., 1844.

29. *Paralysis of the Organs of Sense after Scarlatina: Recovery under the use of Iron*. By Dr. HOFFMAN.—A healthy girl, nine years of age, whilst recovering from a trifling attack of scarlatina, and without assignable reason, was observed to be dull of hearing; by and by, to be blind, or to see very imperfectly; then to have lost all sense of taste, and finally, to be without smell; the common sensation and power of motion were unaffected. This state of affairs

continued in spite of every approved plan of treatment essayed under the eyes of the best practitioners in the neighbourhood: internal medicines of all kinds, baths, sinapisms, blisters, moxas, and animal magnetism (!) The child was now put upon a course of steel, and a little wine was ordered for her, and with such good effect that in three weeks she was again restored to perfect health.—*Lond. Med. Gaz.*, May, 1844, from *Casper's Wochens.*

30. *Abdominal Hydatids.*—Dr. GAIRDNER read to the Medico-Chirurgical Society of Edinburgh, May 1, a remarkable case of abdominal disease, in which he had twice withdrawn by paracentesis from the peritoneal cavity, a quantity of a glutinous substance, resembling, in colour and consistence, calf's foot jelly, and coagulating, like the albumen of eggs, by heat. Some of this matter Dr. G. had exhibited to the society in January, but in a comminuted state, in consequence of having passed through the canula, and the valves of the syringe adapted to it for suction. After the death of the patient in February last, it was ascertained that the whole abdomen was filled with similar matter, amounting in all to about twenty-four imperial pints, and that it consisted of rounded masses having very much the same outward appearance as the ordinary acephalocysts of Laennec, but differing from them in many important particulars. These remarkable parasites had invaded the textures of the liver and omentum, as well as of some of the other viscera. The right lobe of the liver was entirely destroyed by them; the left partially; the omentum converted into a dense and almost cartilaginous tumour, of large size and great thickness, in which many of the parasites were contained, and from which many of them hung pendulous. Dr. G., after detailing the facts of the case, gave a condensed account of the results of his inquiries into the literature of the subject. He found that extensive destruction of the liver by hydatids, was by no means uncommon, and that there was one or two recorded cases, and more especially a very remarkable one by Ruysch, in which the destruction of this organ appeared to have been equally extensive as in his own case. He had not been successful in finding any case in which the omentum had undergone a change of the same sort precisely with that which he had described. Finally, he had examined attentively all the systematic treatises on entozoa in general, or on hydatids in particular, which were accessible to him, besides a great number of pathological works and individual cases in which they were incidentally described, and he had not yet found a single description of a parasite possessing the same physiological and structural peculiarities. He was therefore of opinion that it was a rare one; and that, although it had, in all probability, been occasionally seen, its peculiarities had not yet been observed or described.

Structural and Physiological Peculiarities of the above Entozoon.—Mr. GOODSIR read to the society an account of the structural and physiological peculiarities of the entozoon found in Dr. Gairdner's case, by Mr. Henry D. S. Goodsir. Mr. Goodsir, after quoting from his brother's paper, read to the Royal Society a description of the animal in question, explaining more particularly the structure of the parasite,—stated as its most distinctive peculiarity, the fact, that instead of being like the common acephalocyst, a simple animal, it might be regarded as being of a composite nature. It appeared to consist of several cells, having in their interior a glutinous matter contained in cellular tissue, connected together by a common membrane extending from the free surface of the peritoneum over the surface of the various cysts, and forming their pedicles. On the surface of this membrane, except on the part covering the globular cysts, there were seen numerous circular discs, around the margin of which were a series of stomata opening into tubes extending into the substance of the membrane. These Mr. Henry Goodsir regarded as being the nutritive organs of the animal. With regard to its reproduction, Mr. Goodsir remarked that this took place in two ways, one which respected the extension of the individual existing group, the other as regarded the propagation of the animal to uninfected tissues. This, like the common hydatid, did not enlarge from cellular development, but by simple expansion of the original germinal vesicle. As regards its propagation

to uninfected tissues, Mr. Goodsir stated, that he had been unable to trace the earlier process by which an ovum appeared in the healthy tissue, but he found that when this had occurred, the ovum enlarging makes its way like an abscess to the free surface of the organ, and bursts, leaving an orifice leading into a cavity of the tissue. The formation of these cavities gave to the peritoneum the honey-comb appearance observable in Dr. Gairdner's preparations. After the bursting of the sac, the animal is not discharged from the cavity, but remains attached by its common membrane to the base of the cavity, and then projects outwards elongating its outer membrane so as to form a pedicle.—*L. and E. Monthly Journ. Med. Sci.*, August, 1844.

31. *Hydrochlorate of Ammonia*.—In the medical treatment of pleurisy, and in subacute inflammation of the lungs, and congestions of the mucous membrane, Sir GEORGE LEFEBVRE states that he has availed himself very satisfactorily of a German remedy, which is almost universally employed in such cases, the hydrochlorate of ammonia. In English practice it has generally been confined to external use, but by the Germans it is employed in a great variety of internal complaints, and occupies in part the place of the nitrate of potass. Its employment is confined to subacute affections, congestive states of the mucous membrane of the bronchia, and the chronic affections of the serous membrane; where inflammation runs very high the nitrates of potass and soda are preferred. Hydrochlorate of ammonia has no very decided action on the system, although it sometimes stimulates the kidneys; but it is considered to be deobstruent, and to unload the vessels gradually, so that convalescence is achieved without any critical evacuation. It relieves thirst, and the tongue gets unloaded under its use. It has certainly a decided action on the mucous membrane generally, and is useful in old coughs, accompanied by gastric derangement. The combination of hydrochlorate of ammonia, with tartarized antimony, is regarded by Sir George Lefevre as a valuable mode of administering this remedy. The following is the form usually employed:—

Hydrochlorate of ammonia,	1 drachm.
Extract of liquorice,	3 drachms.
Tartarized antimony,	2 grains.
Distilled water,	8 ounces.

A large tablespoonful of this mixture is administered every two hours. The antimony forms no inconsiderable part in the operation. When its nauseating effects have made sufficient impression upon the disease, it may be withdrawn, and the hydrochlorate continued by itself. In many cases the latter only is administered. Stomach coughs are greatly benefited by it; when the tongue is loaded, it cleans rapidly under its use. A variety of affections of the mucous membrane, sore throats, enlarged tonsils, relaxation of the uvula, &c., feel its influence.—*Thermal Comfort*.

32. *Strychnine in Chorea*.—Dr. ROUGIER has tried this powerful remedy in ten cases, and the result of his experience has enabled him to proportion the dose of this energetic medicine, in cases of this kind, with more precision and exactitude than have hitherto been obtained. His patients were chiefly young boys from six to sixteen years of age. The duration of the disorder varied between one month and four years; the longest duration of the treatment being two months, and the shortest six days. The whole of these cases were cured, one only suffering a relapse, and that yielded to a repetition of the treatment. Eight out of ten of these patients were treated by strychnine alone, the others took at the same time sedatives and camphor. The strychnine was always administered in pills, and very small doses. One remarkable phenomenon was observed in all cases, viz., an increase of the symptoms under the influence of the first doses of strychnine. The greater number experienced tetanic spasms, sometimes very alarming, but which yielded soon to the injection of a glass of cold water. After these first accidents the movements became more regular, and the disease dis-

appeared. Dr. Rougier has been led to conclude that, in order to obtain the specific action of strychnine on the complaint, it should be carried to the extent of producing a species of tetanus, or at least of augmenting, in a sensible degree, the energy of the involuntary movements. A relapse may be safely guarded against by continuing the medicine for a few days after the disappearance of the symptoms, in gradually diminished doses. The success obtained by M. Rougier is such as may encourage practitioners in a trial of this new treatment, but they should never lose sight of the fact that a medicine possessing such violent energy as strychnine, requires great vigilance on the part of the physician.—*Med. Times*, Aug. 31, 1844.

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33. Pulmonary Gangrene.—The principal results of M. BOUDET's researches on this subject are these:—

1. Gangrene of the lungs appears to be more frequent in childhood than at any other period of life.

2. It is essentially of the same nature as those other forms of gangrene that are developed spontaneously, or under the influence of putrescent fever.

3. In the child, gangrene, when it affects the lung, is rarely limited to this organ; usually, several other parts of the body are similarly affected at the same time.

4. The lower and posterior parts of the lungs are most frequently the seat of the disease. We have often occasion to observe that it manifests a remarkable tendency to attack the adjacent organs: thus we not unfrequently find the mediastinum and the pleura, and sometimes the œsophagus also, involved in the destructive process. It may extend by the mere contact of the sphacelated matter, inducing gangrene in the parts with which it comes in contiguity.

5. Gangrene of the lungs may appear in three different forms: in distinct patches, in nuclei or circumscribed masses, and in a diffused and extensive superficies.

6. It may be circumscribed, and a cure may then be effected in the child as in the adult. In such circumstances, the gangrenous corruption becomes surrounded by an organized pseudo-membrane, so that, in course of time, it is perfectly isolated from the adjacent tissues.

7. Local causes—such as inflammation, the existence of tubercles, &c., do not seem to have any direct influence on the production of pulmonary gangrene.

8. Like other spontaneous gangrenes of childhood, this form seems to be always developed under the influence of causes which act on the entire system. Thus, an unsound constitution, shattered health, imperfect or unwholesome nourishment, &c., are observed to predispose to its occurrence. But the proximate cause of the disease is unquestionably a morbid alteration of the mass of blood, consecutive upon scurvy, measles, scarlet-fever, and such like maladies, and which is characterized during life by the appearance of purple spots on the surface, softening of the gums, hemorrhage from various parts, &c., and after death, by patches of ecchymosis, and sanguineous suffusion, and by the extreme fluidity or dissolved state of the blood. In a chemical point of view, this state of things is most probably the result of a diminution in the proportion of the fibrine, and an excess in that of the alkaline ingredients of the blood.

9. The usual symptoms of gangrene of the lungs are dulness on percussion over the affected part, resonance of the voice, mucous or gurgling râle, fœtor of the breath, greenish colour of the sputa, and a peculiar expression of the features that cannot be well described by words.

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In reference to the treatment of this disease, M. Boudet makes the following remarks:—"It is almost always after measles or scarlet-fever that gangrene of the lungs has been observed to occur. Therefore, as a means of prevention, the first step to be taken should be to keep, as far as in our power, children from being exposed to the contagion of the disease. The children who may be affected with it, should be carefully separated and kept apart from the other inmates of an establishment, like that of the Hôpital des Enfants. Moreover, as it has been

shown by the most satisfactory researches, that the exanthemata in question are generally more severe and complicated in children that have not been vaccinated, I should most strongly urge upon all parents, as well as medical men, a more punctual attention to this most necessary precaution."

Whenever, during the progress of measles or scarlet-fever, there is observed any tendency to the occurrence of hemorrhage, or sponginess of the gums, or purpurial eruption on the skin, the physician should diligently examine the state of the lungs; for it is in such a state of the system that pulmonary gangrene is generally developed. The patient should immediately be ordered the free use of a beverage made with lemon-juice or with sulphuric acid: the affected parts of the mouth should be touched with nitric or muriatic acid; acid and antiseptic gargles should be used frequently, and the body and limbs should be sponged with an aromatic acid lotion. Dr. Boudet assures us that he has seen, in the Salpêtrière, many cases in the most advanced stage, and seemingly in a desperate condition, recover under the diligent employment of acid medicines, internally and externally administered. The acids serve to counteract the excessive alkalinity of the blood, while the cordials give tone to the system, and enable it to resist the tendency that exists to the loss of the fibrine. The application of a blister or a sinapism to the legs is often a useful adjuvant; and in many cases decoction of bark, with port-wine and other tonics, may be advantageously exhibited. Some physicians have spoken well of the use of the chlorurets, given internally as well as freely applied to the surface of the body and to the gums. As it is the lower and posterior part of the lungs that is generally affected, the position of the patient should be frequently altered, so that the seat of the disease may not always be in a depending position."—*Med. Chirurg. Rev.*, July, 1844, from *L'Experience*.

34. *The Sanability of Phthisis. The Influence of Malaria.*—The sanability of pulmonary consumption is one of those subjects which must ever command the regard of every philanthropist, and still more of every physician.

This inquiry has gradually been forcing itself upon the attention of the profession since the days of Laennec. Since his time morbid anatomy has done much for its elucidation, although it is to pathology chiefly that we turn for a thorough explication of the truth. Another interesting source of information, however, is to be found in the geographical distribution of the complaint, and its statistics in regions presenting different medical constitutions. It is to this last source that M. de CROZANT has directed attention in an interesting memoir now before us, in the May number of the *Journal de Médecine*.

The part of the country which has fallen under M. de Crozant's examination lies in the department of Nevers, more especially its northern portion, the district around Cosne, and the canton of Donzy, situate on the left bank of the Loire, where the Noain joins the mighty stream, about 100 miles south of Paris, and 30 to the north of Nevers.

The Noain, with a somewhat semicircular course, from its origin at Entrains to the town of Cosne, where it joins the Loire, makes a circuit of eight or ten leagues. But ill-confined within its banks, it overflows twice or thrice a year, and for leagues around converts the whole country into a vast marsh; which is, moreover, interspersed with brushwood and skirted with forests. Hence it is scarcely ever thoroughly dried, remains moist, and makes the villages from Entrains to Donzy, and especially those of Couloudre and Perroy, the most unhealthy of the whole department. The lower portion of the river has a greater fall; and the marshes almost disappear where it joins the Loire. The soil, too, in this locality, is chalky and dry, and the forests are more scanty and distant. The communes of Sully and Saint Quentin are situate here, and are much more healthy than those named above.

The effects of the malaria in these more marshy districts are most melancholy. Intermitents prevail throughout the year,—at particular seasons are peculiarly rife, and, in fact, are quite epidemic. Population here cannot maintain itself; and the rate of mortality far exceeds that of reproduction. Old

age is unknown; and most of the labourers are strangers attracted by the high rate of wages. The inhabitants, generally, both young and old, are pale, cachectic, dropsical, and become old before their time; their spleens are hypertrophied, their livers engorged; and scurvy and struma add their traits to the other squalid features of the picture. They are dull and indolent; and misery, the inevitable result of morbid health, attends them to the tomb. It is fever alone which produces all this languor and wasting, and scarcely another disease shows itself among them.

It is a fact that phthisis is here unknown. M. de Crozant has corresponded with Dr. Lizon, a skilful and well-informed physician, who is familiar with all the details of practice in the district, and who writes,—“Pulmonary consumption is exceedingly rare in our communes, (the canton of Donzy,) and during the twenty years I have practised in the country, I have not seen a single case in the commune of Couloutre.” Throughout the extensive beat of this physician, the best employed in the district, and for the long period he has practised, he has only seen seven cases of phthisis, most of these having something peculiar in their origin and history, and two of them having been cured.

A few details will prove interesting. Of the seven cases, three occurred in Donzy itself, the chief town of the canton, containing between two and three thousand inhabitants. Of these three cases, one was a wool-carder; and his trade could not but influence the development of the complaint. The two others stood to him in the relationships of uncle and nephew; and these were the only invalids in the family. The other four belonged to the commune of Sully, which is much less affected by the malaria. Two of these were cured; and both resided on the banks of the stream;—the one was a miller. The other two, who died, resided in the most healthy part of the commune. To these seven cases M. de C. has added two which fell under his own observation, which was very extensive in the district;—both of these cases apparently were cured. He resided at Sully, saw a great many individuals labouring under intermittent fever, minutely examined the state of the lungs of all who applied to him for advice, and never, except in the cases specified, could discover the slightest indication of tubercular degeneration.

In descending the Noain, as already stated, the peculiar insalubrious character of the locality disappears; and, on reaching its *embouchure* in the Loire, at Cosne, the antagonism between intermittent and phthisis is much less discernible. Here phthisis frequently manifests itself, commingling with the fever, a fact which has been confirmed by Dr. Gambon, the chief physician of Cosne.

It is, therefore, only in the centre of the marshy district that the agency of the malaria should be investigated. In the commune of Couloutre, whose population amounts to 696 souls, Dr. Lizon, during the twenty years of his unremitting practice, had not seen a single case of phthisis. The commune of Perroy, which is contiguous to the preceding, and equally sickly, possesses the same immunity. It was after passing Donzy, following the course of the Noain, that he saw the seven cases already specified; and these all occurred in the same commune of Sully, with a population of 1500, a portion of whose surface forms quite a contrast to the swampy soil of the other: and, finally, upon arriving at Cosne, this complaint is sufficiently rife, and its exciting causes prevail over the influence of the malaria, which is now greatly weakened, and gradually disappears.

The four cases of the cure of phthisis, which have been observed out of the nine which manifested themselves in the environs of the marshy district, all occurred on the swampy margins of the Noain, in the commune of Sully-Latour, in circumstances which were far from promising such a happy result. As exhibiting the features of these cases, M. Crozant furnishes the particulars of all the four, and they appear in every way to vindicate their claim to be—we had almost said—desperate cases of this most fatal disorder. In illustration, we subjoin one of them.

“*Obs. 4.* In May, 1841, I was requested to visit a young lad, a miller by

trade, aged 18, who was declared by his physician to be labouring under a chest complaint; and to such a degree that he could not long survive. He was at death's door when I saw him, and it was easy to perceive that the diagnosis could not be doubtful.

"His mother was of a feeble constitution, and subject to cough; the father was healthy; he has since died, but of what disease I am ignorant. The lad himself, like all the children of the village of Sully, was emaciated and diminutive; and hardly appeared to have attained the age of 13. He had always been subject to cough, and was of a sickly habit, but this was attributed to the fever, and he was treated accordingly. At the same period of the preceding year he was confined to bed for a month by the same disease. From that time he never regained strength; and both during its course, and frequently since, he has had frequent severe attacks of hæmoptysis, with diarrhœa, and night sweats;—a troublesome cough, with abundant expectoration, never left him. From time to time he had attacks of fever towards evening, continued want of appetite, and great emaciation. Such are the symptoms which most attracted the attention of his parents.

"He had been confined to bed for three weeks previous to my visit. When I first saw him he was extremely emaciated; but this was easily accounted for by the continued and copious diarrhœa. His strength was completely exhausted; his voice was feeble and husky. He had want of appetite, bitter taste in mouth, but no pain in the bowels. The cough was frequent, occurring in fits; the expectoration purulent and solid, floating in a considerable quantity of frothy mucus. There was some crepitation under the left clavicle; posteriorly the sound was dull; but the respiration clear without *râle*; over the rest of the lung the respiration was noisy. Under the right clavicle there was strong cavernous respiration, with gurgling, and a very dull sound: the rest of the lung appeared to be healthy. I saw this patient five times during the two months I remained at Sully-Latour. I merely prescribed some trifling remedies for him, with the exception of a vomit, which I ordered, as he swallowed his expectoration from sheer weakness. I noticed no change on him during this period; and I left him in what I considered a desperate state, truly astonished that he should have survived so long.

"On my visit the following year, I was informed that my patient was on foot; that he had got rid both of his cough and expectoration, had a good appetite, and was again working in the mill. I was told he had been recommended to take *l'herbe à la forceure*, (the periwinkle, I believe,) that he had thriven under its use, and regained strength; the sweating and diarrhœa gradually diminished, and at last completely disappeared; he still continued to inhabit his damp abode, but the fever had not reappeared for the last eight or ten months. I congratulated the mother on the recovery of her son, persuaded, at that time, that she had converted a merely temporary amelioration into a complete cure. I did not wish to destroy the maternal delusion, and I did not see the lad himself.

"Last summer (1843) I did not fail, on my arrival, to inquire after the health of this lad. I was told he still continued well; and that he had gone to another mill. I hastened to see him. It was difficult to recognize in the strong and vigorous lad now before me, the diminutive-looking boy I had attended three years previously. He bore no external trace of the miserable state I had then seen him in. I found nothing on auscultation. The anterior and superior part of the right side of the chest was perhaps a little less prominent than that of the opposite side; and the respiratory murmur was somewhat fainter there than over the other parts of the thorax. He still continued the trade of a miller; travelled about the country collecting loads for the mill; carried sacks of grain on his back; was constantly exposed to all the vicissitudes of the weather, and enjoyed the most perfect health."

We close this notice with M. C.'s concluding remarks. "To what are we to attribute these cures? For myself, I cannot say. Active treatment there was none. As little was there any peculiar hygienic care or influence. All that I

can discover is, that the patients were affected within a marshy and sickly district, on the banks of the river, in the midst of low and swampy grounds."—*Lond. & Ed. Monthly Journ. Med. Sci.*, July, 1844, from *Journ. de Med.*, May, 1844.

35. *Rupture of the Aorta at its junction with the Heart.* By W. RYAN. (*Lancet*, Feb. 17, 1844.)—The patient, a woman aged 60, died suddenly. There was a rupture at the junction of the aorta with the ventricle towards the right side. The rupture was somewhat oblique, and from the inside the handle of a scalpel could be passed into the pericardium. There was considerable hypertrophy of the heart, which was not much loaded with fat. No ossific deposits nor cause of obstruction to the circulation were found in the aorta. She had long complained much of "pain in the stomach," for which she had been under much ineffectual medical treatment.

36. *Preservative influence of Vaccination—propriety of Revaccination.*—The degree of preservative influence exerted by vaccination, and the propriety of revaccination, continue still to be debated on the continent, especially at the Academy of Medicine at Paris, where M. BOUSQUET and M. GAUTHIER de Claubry take different sides of the question. M. Bousquet (*Bulletin de l'Acad. Royale de Médecine*, Oct. 15, 1842, and Sept. 30 and Oct. 15, 1843,) is of opinion that the vaccine virus becomes weakened by its transmission through numerous individuals, and appeals to the fact that the effects produced by the renovated vaccine virus in 1836 were much severer than those which followed vaccination with the old matter. It is, however, a singular fact that the difference between the vesicle produced by the new virus and that produced by the old is not perceptible till the sixth or seventh day, by which time the preservative power of vaccination has been exerted, as is shown by the circumstance that a second vaccination after that day does not produce any effect. Still the increased frequency of variolous and varioloid affections of late years, and the fact that the greater number of persons in whom small-pox occurs after vaccination are adults, induce M. Bousquet to believe that a weakening of the vaccine virus does result from its repeated transmission through different individuals, and that the preservative power of vaccination does not extend beyond a certain term of years, though its modifying power continues during the whole of life. He inclines, therefore, to the adoption of revaccination. M. G. de Claubry, (*Ib.*, Sept. 30, and Oct. and Nov. 1843,) on the other hand, insists on the absence of any ratio between the severity of the local effects of vaccination and its preservative power, and regards the symptoms which have followed vaccination practised direct from the cow merely as phenomena attending the naturalization of cow-pox in the human subject. When this has once been accomplished, the transmission of the virus through hundreds of individuals in no way impairs its virtues or modifies the character of the eruption which it occasions. In proof of this he mentions that in some places the same virus has been employed for twenty-five, thirty, or even forty years; and yet the character of the vaccine vesicle has continued unchanged during the whole time. No argument for revaccination can be drawn from the occurrence of secondary small-pox, since it occurs even in persons who have had variola once in the natural way; and M. G. de Claubry states, though on rather slender grounds, that this takes place in one of every sixty-three persons who have been attacked by the natural small-pox. He asserts, too, that varioloid eruptions were met with in the early days of vaccination as frequently as now, though their variolous nature was not then apprehended; and denies that such eruptions are by any means confined to adults. He finally endeavours to weaken the positive evidence in favour of revaccination, by showing that varicella, varioloid eruptions, and variola have occurred in the Prussian army among persons who had been revaccinated.

The results of recently-performed revaccination in the Prussian army, and in a district of Silesia, are contained in the *Med. Zeitung*, Jan. 18, and April 5, 1843.

Dr. KAHLERT, of Prague, has made the experiment of passing vaccine lymph

from the human subject through the cow, with a view to increase its activity. This experiment, which is the same as M. Bousquet and Mr. Ceely performed, was quite successful. The retro-vaccine lymph thus obtained produced very characteristic vaccine vesicles in some children who were inoculated with it, but without causing any peculiarly severe constitutional disturbance. (*Oest. Med. Jahrbücher*, June, July and Aug., 1843.)—*Dr. C. West's Report on the Progress of Medicine.*

SURGICAL PATHOLOGY AND THERAPEUTICS AND OPERATIVE SURGERY.

37. *Erysipelas—treatment with ointment of Nitrate of Silver.*—Erysipelas, the ambulant and stationary, both forms of frequent occurrence and often serious, are differently treated in the hospitals and in private practice. The method of Dupuytren, however, (flying blisters,) appears to be generally adopted, and its results are, in fact, sufficiently satisfactory. M. JOBERT follows a different method which he finds is perfect. It consists in surrounding the erysipelatous surface with nitrate of silver ointment, and the phlogosis promptly disappears. The ointment is prepared of three degrees of strength:—the first contains four parts of the salt, the second eight, and the third twelve to thirty parts of lard. The parts selected are anointed with a small portion of the ointment, at distances of a few centimetres, each spot being of the size of a dollar, and then covered with blotting paper. A simple eruption results, but never an eschar. The medicine is absorbed, doubtless, and acts dynamically like cantharides. The antiphlogistic action of nitrate of silver is now perfectly established, and its beneficial effects in all phlogoses can no longer be doubted.—*Annales de Thérapeutique*, July, 1843.

38. *Fractures of the Limbs.*—It is remarkable that, since the two dominant methods, adopted, until late years, for the treatment of fractures of the lower limbs, have lost their powerful protectors—we allude to the inclined plane and the horizontal plane of Scultetus, adopted by Dupuytren and Boyer—each hospital has its own peculiar apparatus. At La Charité, fractures are dextrined, and the patients allowed to walk about; whilst, at the Hôtel Dieu, they are faithfully treated according to the traditions of the Academy of Surgery. At the Val-de-Grâce fractures are encased [*emboîtés*,] whilst, at St. Louis, they are gaitered, &c.; and, what is remarkable, the success is everywhere nearly equal. The following is the method adopted by M. Jobert. This surgeon has renounced every kind of bandage of pad and splint, at least in simple fractures. Whether the fracture be of the thigh or leg, the neck of the femur, or the shaft of this bone, the tibia or fibula, the patient is put to bed, his limb is laid horizontally, as if uninjured; a buckskin gaiter, covering the foot and lower third of the leg, is applied; to the bottom of this gaiter are attached straps with buckles. The fracture is usually set, and the straps are buckled around the iron foot-bar of the bedstead. Extension and adaptation are effected by this means at the same time—and this is the whole dressing. The straps are to be shortened more or less the subsequent days. If the fracture is at any part of the arm or forearm, the patient is put to bed, a thick glove extending over the wrist, and with straps like the gaiter. The fracture is set, the straps buckled, and all is finished. No hoops. The cures are perfect.

As is perceived, we have to return at present to permanent extension in the treatment of fractures. The method of walking about and the immovable apparatus do not appear to make much progress. M. Lisfranc has remained nearly constant to the principles of Dupuytren; we say nearly, because this skilful practitioner has beneficially modified these principles. Extension appears to us to be really necessary only in fractures of the lower limbs. It is now ten years since we maintained, in a memoir published in the *Transactions Médicales*,

that the best method of applying this system was that which we had seen practised in the Hôtel Dieu, of Lyons, in 1828, which we had adopted in 1833 in a case of oblique fracture of the thigh—this mechanism was very similar to that devised by M. Jobert.—*Annales de Thérapeutique*, July, 1843.

39. *Amputations—dressing after.*—M. JOBERT, at the Hôpital St. Louis, performed two amputations in our presence, one of the leg near the ankle for an affection of the bones of the foot, the metacarpo-phalangean articulation for ulcerated spina ventosa. We mention them merely to draw attention to an important point relative to the dressing. This surgeon united the wound in both subjects with the hair-lip suture, which is very convenient, and perfectly fulfils the aim to obtain union by the first intention, so much desired by modern surgeons. The points of the pins are cut off with nippers. Short, tight bandages, artistically arranged, complete the approximation of the edges of the wound; a pad of lint, spread with cerate, was applied over the wound, afterwards charpie, compresses and a bandage. M. Jobert thus unites all bleeding wounds, and he obtains union by the first intention more surely than by the use of bandages alone. This method appears to be more expeditious and more certain than the interrupted suture which some justly celebrated surgeons recommend generally to be used. Another means which this surgeon resorts to, in order to obtain his object, is to tie the smallest vessels, and to wash well with cold water the parts before bringing them together.—*Annales de Thérapeutique*, July, 1843.

40. *Observations on the recorded cases of Operation for the Removal of Ovarian Cysts.* By BENJAMIN PHILLIPS, F. R. S.—The object of this paper is to bring together the results of these operations, for the purpose of determining whether the plan of treatment is to be regarded as a benefit to humanity or not.

Extirpation of ovarian cysts has been practised, as appears from the tabular arrangement of the cases, at least 69 times. In 50 cases, the tumour was extracted; in 14 cases, adhesions or other circumstances prevented its removal; in 5 instances no tumour was found.

Of the cases in which the operation was completed, the tumour being extracted, 30 terminated favourably, the patient recovered; in 20, the termination was unfavourable, the patient died. Of the 5 cases in which no tumour was discovered, all recovered. Of the 14 cases in which adhesions or other circumstances prevented the extraction of the tumour, 8 recovered, 6 died. The proper way, therefore, according to the author, of looking at this plan of treatment, is to observe the number of cases submitted to operation, and the number of recoveries after the removal of the tumour. He conceived this to be the fair way, because what has happened already may happen again. Adhesions may be too strong and extensive to make removal prudent; the tumour may be other than ovarian; or, it may be, that no tumour may be found. Regarded in this light, it appears that the operation has been undertaken 69 times, and that in 30 instances the patient has recovered after the extirpation of the tumour. It is true that 43 patients survived gastrotomy, but many of them were subjected to such a fearful operation, on the one hand without necessity, and on the other without being disbarred of the disease.

Two different plans have been followed in the operation, and it is proper to ascertain whether there has been a corresponding difference in the results. In the one plan, the incision of the abdominal parietes is sufficiently extensive to admit of the removal of the tumour entire; often extending from the ensiform cartilage to the pubes. In the other plan, the incision has had the extent necessary for the removal of so much of the tumour as would not escape through a puncture, or incision made in it before the extraction was attempted. If the tumour contains little or no solid matter, a puncture might cause the complete evacuation of the contents, and the cyst might be removed through a very small opening. The author thinks the evacuation before extraction, and not the exact length of the incision, the important distinction between the two operations.

The principle of extraction entire has been followed in 44 instances; the instances of successful removal by this plan amount to 18.

The cases in which the plan of procuring the evacuation of as much as was practicable of the contents of the tumour, before the extraction of the tumour was attempted, amount to 25; the instances of success to 12.

The evidence is then directed to the consideration of the following points:—

1st. Can we determine with certainty whether a tumour be ovarian or not? If not, have the failures been so frequent as to constitute a reason why the operation should not be attempted?

2d. Supposing a tumour to exist and to be ovarian, can we ascertain the nature of its contents as well as its connections? If not, have the failures been so many as to be an objection to the adoption of the operation at all?

3d. Are the results of this plan of treatment sufficiently favourable to justify us in preferring extirpation to any other mode of treating ovarian tumour? If so, what plan of treatment promises most success?

The general materials, together with the circumstance that the author has been present, either as principal or assistant, in six of the operations, have given him peculiar facilities for fairly considering these questions; and the conclusions he comes to are,—that we have not the means of determining with absolute certainty whether a tumour be an ovarian cyst or not, though we think the chances of error ought not to be so large as is represented by the tables; that we have no sure means of ascertaining the contents and connections of tumours presumed to be ovarian. After an elaborate consideration of the bearings of the third question, he says, the aspect in which the question should be ultimately regarded is this: the circumstances of the patient's case are so pressing that relief must be afforded, and as all other means have failed, it must be by an operation. Tapping is usually a successful operation, so far, at least, as to afford immediate relief, and in an ordinary case, the patient may reasonably expect to live four or five years, not in comfort, it is true, but requiring relief three or four times, as it may be, in a year. Extraction, though not a very painful, is a dangerous operation; the experience we possess justifies us in the expectation that, in at least 45 cases out of every 100 the tumour may be extracted, and life saved; but at the same time, it must not be concealed, that out of the 69 operations to which reference is made, 26 died, and that soon,—in fact, in a few days.

If the results already stated should be held to justify the performance of the operation of extraction, in cases of ovarian tumours, it is incumbent upon us to select the operation which is least perilous and painful to the patient. It must be borne in mind that the plan of making such an incision as will admit of the extraction entire, was employed in 44 cases, and that the recoveries, after extraction, amount to 18 cases. The plan of making such an incision as would admit of the extraction, where as much as possible of the contents of the tumour were removed, was followed in 25 cases, of which 12 recovered after extraction. The proportion of recoveries being in the one case 43 and in the other 48 per cent. The author's own experience is much more favourable, being 5 out of 6. It is evident, therefore, that the preponderance of success is in favour of what is termed the minor operation, that is to say, an operation in which the incision is as small as is consistent with the easy removal of the emptied cyst, provided it be large enough for the convenient application of the ligature around the pedicle.—*Lancet*, July 6, 1844.

41. *Amputation at the Ankle Joint.* By JAMES SYME, Esq.—It may seem a startling, but it is nevertheless a true statement, that amputation at the ankle-joint, with hardly any exceptions, may, and ought to supersede amputation of the leg below the knee. In order to establish this position, it is necessary to show, in the first place, that the stump which results from the former operation is fit for the duties required of it; and, secondly, that the patient may, under the various circumstances concerned, be relieved as effectually in the one way as the other.

The idea of amputating at the ankle-joint is not new, the operation having

been performed on the continent by different surgeons before I thought of it; and it would probably ere now have become generally adopted, but for the doubt that was entertained as to the ends of the bones being sufficiently covered to afford the patient a comfortable and useful support for the limb. For my own part, when I read of dissecting flaps of skin from the instep or sides of the foot, I felt so much distrust in the protection that could thus be effected against the injurious effects of pressure on a part so exposed to it, that I had no desire to try the experiment. But it occurred to me that by performing the operation in a different way all such objections might be obviated. This was to save a flap from the sole of the foot and thick integuments of the heel, by making a transverse incision, and dissecting these parts from the *os calcis*, so that the dense textures provided by nature for supporting the weight of the body, might be still employed for the same purpose. Two trials of this operation having proved satisfactory, I communicated them to the profession, and am glad to find that not only my colleagues in the hospital here, but also practitioners in other places have already acted upon this recommendation. The additional experience of my own practice now enables me to suggest some improvements in the mode of procedure—point out an error to be avoided—and verify the expectation formerly expressed as to amputation of the leg being hardly ever required.

The best instrument for performing the operation is a large bistoury or small amputating knife with a blade about four inches long. There is no occasion for a tourniquet, as the assistant has complete command of the vessels by grasping the ankle. In my first operations, the flap was made unnecessarily long; and I feel confident that the following directions may be trusted for exactly determining its proper extent. The incisions across the instep and sole of the foot should be curved, with the convexity forwards, and exactly opposite each other. A line drawn round the foot midway between the head of the fifth metatarsal bone and the malleolus externus will show their extent anteriorly, and they should meet a little way farther back, opposite the malleolar projections of the tibia and fibula. Care should be taken to avoid cutting the posterior tibial artery before it divides into the plantar branches, as in two cases where I did so there was partial sloughing of the flap. If the ankle-joint is sound, the malleolar processes should be removed by cutting pliers; but if the articulating surfaces of the tibia and fibula be diseased, a thin slice of these bones should be sawn off. The edges of the wound should be stitched together, and lightly dressed. When the cure is completed, the stump being conical in form, and having for its apex, or central point of pressure, the thick integument which covered the heel.

In proceeding to consider the circumstances in which this operation may be performed, it seems worthy of notice that, until a recent period, amputation of the leg was in this country generally resorted to for the removal of diseased bone, when the part affected extended upwards beyond the metatarsus. The operation of Chopart might frequently have accomplished all that was requisite, but unfortunately laboured under a prejudice which opposed its adoption. This was, that the extensors of the heel, being deprived of antagonizing action, would point the stump downwards, so as to render it useless as a support for the body. In 1829, for reasons elsewhere stated, (*Ed. Med. and Surg. Journ.*, Oct. 1829,) though there was no precedent for its performance in Edinburgh, I ventured upon this partial amputation of the foot, in a case where removal of the leg had been proposed, with perfect success, and without the slightest inconvenience of the kind anticipated. Encouraged by this result, I resolved to adopt the operation; and before long performed it six times with entire satisfaction. Since that time the operation has been established here, and regularly practised in cases admitting of its application.

Although the introduction of Chopart's operation considerably abridged the field for amputating the leg, there were still two situations in which caries frequently occurs, where it was beyond the reach of any partial removal of the foot. These were the joint between the astragalus and *os calcis*, and the ankle-joint itself. In the former of these situations, the diseased bone is so near the fibular side of the heel, that it is apt to seem within reach of the gouge or other

means of extirpation; and attempts have often been made to effect this, but seldom if ever with success, owing to the caries extending along the complicated articulating surfaces of the bones affected. I have succeeded in such a case, by making a fair breach through the foot from side to side, and passing a thick seton, which could be made the vehicle of red precipitate and other escharotics; but even this treatment cannot be depended upon, and its failure, in a case where I had ventured to indulge hopes of success, led me to think of contriving a method of amputating at the ankle-joint which might afford relief under such circumstances, and afford the patient a comfortable stump. In the case of John Wood, formerly related, (*Monthly Journal*, February, 1843,) the disease was thus situated, between the astragalus and os calcis. Soon after that case had terminated favourably, I met with another related in the same paper, where the ankle-joint itself was affected; and did not hesitate to repeat the operation. The gentleman who was the subject of it, though long in very indifferent health from other causes, now walks with ease and comfort.

Compound dislocation of the ankle-joint, either with or without that curious displacement of the astragalus which results from falling with great force on the heel, was formerly held to require amputation of the leg. The authority of Sir A. Cooper's experience encouraged attempts to preserve the limb in such cases; and in private practice both forms of the injury are now frequently conducted to a successful issue, though in general through a protracted process of recovery. But it must be admitted, that many lives have been lost, especially in hospitals, from trying to retain the limb. In the Royal Infirmary, I find that of 13 patients who had suffered compound dislocation of the ankle, and were not subjected to amputation, only 2 recovered; and even in the event of recovery, the foot generally remains in such a state of stiffness, weakness and sensibility of external impressions, as to be rather an incumbrance than a support to the patient. Now, all this danger, tedious confinement and permanent discomfort might be obviated by amputating the foot in the first instance. So long as the only alternatives were attempting to preserve the limb, and amputation of the leg, there was a strong inducement to abstain from operating. But if the patient's safety and speedy recovery may be insured by taking away merely that part of the limb which at the best can hardly be of any value either as to use or ornament, and at the same time producing a stump in all respects preferable to a shattered, stiff, irritable foot, I think there should be little hesitation in resorting to amputation at the ankle-joint under the circumstances in question.

[Professor S. gives the details of four cases, in which he amputated at the ankle-joint, and then goes on to observe,—]

It has now been ascertained that amputation at the ankle-joint may be performed so as to afford a stump in every respect convenient and comfortable, retaining the full use of the knee-joint, and enabling the patient to walk with perfect freedom. It has also been shown that by means of this operation caries of the upper range of the tarsus, of the joint between the os calcis and astragalus, and of the ankle-joint itself may be removed; while compound dislocation of the ankle, and destruction of the foot beyond the extent admitting of Chopart's operation, may also be remedied by it. But what other occasion besides this is there for amputating the leg? Malignant tumours of the tibia and fibula require amputation of the thigh, and compound fractures of the leg, so severe as to demand removal of the limb, hardly admit of the operation being performed below the knee, on account of the soft parts so near the seat of injury being unfit for healing action. The cases, therefore, if any, must be very few. In my own practice, since adopting amputation at the ankle-joint, I have removed only one leg below the knee, under very peculiar circumstances, which did not permit the milder measure to be adopted.

In conclusion, it may be remarked, that the advantages of amputation at the ankle-joint, as compared with amputation of the leg, are not limited to the smaller degree of mutilation and greater utility of the limb; since the operation is also attended with much less danger. This will appear when it is considered, 1st. How much less the shock must be, from the small extent of parts removed,

which is little more than in Chopart's partial section of the foot. 2d. That the smallness of the arteries divided prevents any risk of serious hemorrhage. 3d. That the cancellated texture of the bone exposed is not liable to exfoliate. 4th. That from the medullary canal remaining entire, inflammation of its contents and also of the veins is prevented.

In confirmation of these grounds for favourable expectations as to the diminution of danger, I am now able to add the proof of experience, since, in fourteen cases where the operation has been performed, eight in my own practice and six in that of others, there is not one fatal result.—*Lond. and Ed. Month. Journ. Med. Sci.*, Aug., 1844.

42. *New method of operating in Hare-lip.*—However ably, says M. MALGAIGNE, the operation for hare-lip may be performed, there always remains on the median line, near the free margin of the lip, an ugly depression. Several methods have been proposed to remedy this imperfection in the operation, among which may be mentioned the operating by two curved incisions, but they have all failed in effecting the desired improvement. M. Malgaigne, therefore, proposes the following plan:—The paring is commenced from above, and carried downwards. It may be done by the scissors in the same way as the ordinary operation; only when the operator has arrived so low that but a small pedicle remains, he stops. The same plan is followed on the other side. Thus two small flaps are formed which merely adhere to the lip by their pedicle. After uniting with pins the two sides of the labial division in its entire length, except at the lower extremity, the small flaps are turned downwards and placed in juxtaposition. The surgeon having formed his opinion as to the length which they ought to retain in order to form a substitute for the natural median prominence, then shapes them as he thinks fit, conserving a greater or less portion, according to the extent of the deficiency which he has to supply. He then completes the reunion by uniting the two flaps by means of a suture or two, or a very fine insect-pin. If the pin or suture is placed very near the free edge of the lip, the cicatrix subsequently appears scarcely visible.

This operation has been twice performed; once by its author, a second time by M. Guersant. M. Malgaigne states that in his case the operation was perfectly successful. In M. Guersant's the median tubercle appears to have been rather too large. M. Huguier proposes to use the scalpel instead of the scissors.—*Lancet*, July 6, 1844, from *Journal de Chirurgie*.

43. *Tubular Polypus of the Rectum.*—Mr. ELKINGTON presented to the Birmingham Pathological Society, a specimen of tubular polypus of the rectum removed from a child fourteen months old. The patient had been ill three months; was frequently troubled with diarrhœa and vomiting, which were thought to arise from teething. When seen by Mr. E. on the eighth of March, there was a small substance hanging down from the rectum, about one inch in length. It had very much the appearance of the end of a lumbricus, the end being curved towards the perineum. On passing the finger into the rectum, it was found to be from two to three inches long, and attached to the right side, about two inches above the anus. It had only passed through the anus that day. The child was very pale and restless, and constantly vomiting and straining; the pulse quick and feeble. The next day, rather more of the substance was down, and slight prolapsus of the gut, which he returned.

March 10th.—About three inches of the intestine down, and the whole of the polypus external, its attachment being fully exposed. It was rather conical in shape, the apex being thinner than the base, or the part attached to the mucous membrane. Above its upper surface there was a deep sulcus, but by putting the membrane on the stretch, its attachment could be exposed both above and below. It felt tubular, and had something the appearance of the appendix cæcum. The child vomited frequently, was constantly straining, and each effort forced down more of the intestine; it was restless, and constantly tossing itself about; the pulse very feeble. The only chance of saving the child appeared to be the

removal of the polypus. Mr. E.'s brother tied a ligature round it, and then cut it off. He then returned the intestine, and applied a pad and bandage. Immediate relief was obtained; the sickness and straining abated, and the child gradually improved. In less than a week it was convalescent. The day after the operation there was slight prolapsus, but it was easily returned, and did not occur again.—*Prov. Med. and Surg. Journ.*, June 26, 1844.

44. *Lipoma*.—Dr. ZAPPOLI relates, in the *Bulletino delle Scienze Mediche*, for January, 1844, a case of lipoma, in which the tumour weighing twenty-eight pounds was attached to the upper cervical vertebræ. What was curious in this case was that the patient had an extremely voracious appetite, but, nevertheless, rapidly emaciated; and the extirpation of the tumour put an end to the excessive craving for food, and restored nutrition to its natural condition.

45. *Surgical Treatment of Dropsies*.—In the second edition of his *Formulaire*, M. BOUCHARDAT has published the formula of the solution used by M. Velpeau, in the treatment of hydrocele. The following is an extract from a work recently published by M. Velpeau on the surgical treatment of dropsies. He says, being desirous of ascertaining if the serous cavities could recover by means of iodine injections, as he supposed theoretically, he performed a series of experiments, which, as will be seen, have had a double result. He practised iodine injections into the peritoneal cavity of a dozen dogs. The peritoneum was selected as being the largest cavity of the economy, and consequently, if the effects of the injection in that case were not fatal, it could be practised everywhere else with impunity. The result of his experiments is that a very strong iodine injection into the peritoneum rapidly causes death, but if prepared with a very small quantity of iodine, the requisite proportion of which has been fully ascertained, it only occasions symptoms which are easily removed; and in no case either of the animals who have died from its use, or in those who were killed, has the inflammation manifested any tendency to suppuration. The animals that survived have taken food and drink from the third day, and were convalescent by the tenth. Adhesions have taken place most frequently between the intestines and the other viscera, without any being formed between the latter and the parietes of the abdomen. Glutinous and gelatiniform in the beginning, these adhesions are often found reduced to simple shreds, more and more supple and extensible the greater the distance of time after the injection. Having thus obtained the certitude that with the tincture of iodine introduced into the shut cavities, a merely adhesive and not purulent inflammation is induced, that when infiltrated in the tissues, it does not cause gangrene, that the adhesions which it causes are destroyed by the movements of the organs, and that the shut cavities may be restored after having been destroyed, M. Velpeau has thought himself authorized to apply the tincture of iodine to the treatment of a great number of cases of dropsy.

Desirous, however, of proceeding from the more simple to the more serious forms of the disease, he commenced with the most common form—that of hydrocele, in the treatment of which irritant injections had been already used. From that he tried it in encysted hydrocele, congenital hydrocele, hydrocele of woman, and, finally, in that of herniary sacs, in treating which practitioners did not dare to use the vinous injection. After these primary essays, he proceeded next to attack dropsies of the subcutaneous bursæ, and he thus used the tincture of iodine in the bursæ on the dorsum of the foot, around the ankles, in front of the patella, at the back of the knee-joint, in the popliteal space, in front of the head of the tibia, and even in the body of the thigh.

It being requisite, in order to obtain a cure of certain dropsies, to induce an attack of adhesive inflammation, but fearing the occurrence of suppuration, it became necessary to seek for a substance which should always excite the one without any fear of causing the other. A certain number or means of this kind were already used in practice, as regarded hydrocele. Wine, which has hitherto been found the most efficacious, succeeds very well, but, among others, it has

the serious inconvenience of causing gangrenous inflammation when it is infiltrated in the tissues. The fear of a similar consequence has naturally prevented surgeons from employing the vinous injection in other regions, or in larger serous cavities than that of the scrotum. M. Velpeau believes that the tincture of iodine diluted with water is a more appropriate application. Introduced through a puncture into the shut sacs, this liquid causes almost constantly the adhesion of the opposite parietes of the cavity which it touches. Infiltrated into the cellular tissue, it does not cause gangrene; of this fact M. Velpeau is assured by the result of numerous experiments; he has injected it under the skin and between the muscles of several animals—dogs and rabbits, for instance—and in no case did either serous inflammation or gangrene arise. At the end of four or five days there did not exist the slightest trace of pain in the part where the infiltration took place. As he has observed the same thing in man, after certain operations for hydrocele, he has no hesitation in saying that the tincture of iodine, diluted with a sufficient quantity of water, does not give rise to gangrenous inflammations when it is infiltrated into the tissues. Hygroma, nodus, and the hydatidiform tumours of the wrist, have been attacked in the same manner, and in no case has the injection produced serious consequences. Ganglionic and glandular dropsies, the voluminous cysts in the hollow of the armpit, the supra-clavicular region, the parotid region, and the sub-maxillary region, have yielded to this mode of treatment with more facility, perhaps, than dropsy of the scrotum. Similar tumours developed in the breast have by these means been caused to disappear in a week or two. A more serious malady—one less accessible to ordinary measures—the goitre, is also capable, in certain cases, of being submitted to the same mode of treatment. When the tumour contains a transparent or opaque liquid substance, it yields as readily as ordinary hydrocele to iodine injections. M. Velpeau has thus obtained a cure in six cases.

In all these cases there was no fear of being arrested in the use of irritant injections, either by the inconvenience which might result from the obliteration of a shut sac, or by the danger that might arise from excessive inflammation; the same, however, could not be said of the joints when affected with dropsy. However, having ascertained that the tendons around which the iodine had been injected, readily regained their mobility after the operation, encouraged by the facts already mentioned, and convinced that suppurative inflammation might be avoided, Velpeau applied the same plan of treatment as for hydrocele to certain diseases of the joints. As old, obstinate cases of hydrarthrosis, when combated unavailingly by the ordinary plan of treatment, sometimes terminate in a serious disease requiring the amputation of the limb, M. Velpeau considers the circumstances justified his adopting the operation in question. The experiments of a celebrated surgeon, M. Bonnet, of Lyons, which were carried on at the same time, have been performed on at least twenty patients. Those which Velpeau himself instituted have not produced such a frightful list of symptoms as practitioners have hitherto anticipated. A rather severe pain at the moment of injection, agitation, with insomnia and slight fever, and a moderate inflammatory swelling, lasted for some days; such are the immediate results of the operation. The resolution of the tumour is soon effected, and the movements of the limb, at first impeded, are speedily restored perfect in patients affected with simple hydrarthrosis; so that we are warranted in saying that dropsy of the articulations may be safely treated by iodine injections.

M. Velpeau, in conclusion, inquires if we may hope that certain varieties of spina bifida, of hydro-pericardium, of hydrothorax, and ascites, may also be cured by this plan of treatment? It would be rash, he says, to answer this question in the affirmative, without previous experience and direct observation; but he thinks the facts in his possession and analogy are sufficient to justify new experiments in that direction; and he adds, that iodine injections have succeeded with him equally well in purely liquid hæmatocles as in hydrocele.—*Med. Times*, from *Bouchardat's Annuaire de Thérapeutique*, for 1844.

46. *Aneurism of Innominata treated by the simultaneous Ligature of the subclavian and right primitive Carotid Arteries.*—M. ROSSI has applied simultaneously, ligatures to the subclavian and right primitive carotid arteries for an aneurism of the innominata. The patient lived six days after the operation; and the autopsy showed that the left carotid and right vertebral arteries were obliterated, so that, during the six days the patient lived after the operation, all the blood received by the brain was through the vertebral artery of the left side.—*Gaz. Méd. de Paris*, Jan. 27, 1844, from *Bulletino delle Scienze Mediche*.

47. *Suppuration in the Maxillary Sinus—Evacuation of the matter by means of atmospheric air.*—DR. A. BUCHANAN relates, in the *Lond. & Ed. Monthly Journ. Med. Sci.*, Dec. 1843, a case of suppuration in the maxillary sinus, in which he resorted to a very ingenious mode of evacuating the pus, and which may be usefully employed in other cases of suppuration in bony cavities. A tooth had been extracted, one of the fangs of which communicated with the antrum of Highmore, but the opening was so small that the matter would not flow out, and the patient, refusing to submit to the operation for the removal of the bottom of the maxillary cavity, Dr. B. resorted to the following process:—

“A blow-pipe was procured, having the necessary degree of curvature at its smaller end, and a bladder attached to the other end, which was inflated by the patient. The nozzle of the blow-pipe was then introduced into the orifice in the bottom of the maxillary cavity, when, on compressing the bladder, the air ascended to the top of the antrum, and forced the matter downwards into the mouth. By this means about one ounce and a half of fetid matter was discharged; two ounces were collected, but probably at least half an ounce was saliva. The same operation was repeated morning and evening, and a small quantity of matter obtained for some time after.”

48. *Radical Cure of Hydrocele.*—The following operation for the radical cure of hydrocele is practised and recommended by Dr. W. H. PORTER, the Professor of Surgery to the Royal College of Surgeons, Ireland:—

Dissatisfied with the results of the usual operation practised for the cure of hydrocele by injection, Dr. Porter was induced to make trial of other methods, and, after the experience of several years, has adopted the one the description of which we now proceed to quote. This operation is partly that by incision, the only difference being, that, instead of dividing the tunica vaginalis in the entire extent of the tumour, the incision extends only from an inch to an inch and a half in length, and partly that by the tent. Having first punctured the tumour in order to examine the state of the parts, and satisfy himself that it is a case in which an attempt to cure the disease radically may be safely made, or at least in which such attempt would be justifiable, Dr. Porter allows the sac to fill again. When the disease has reappeared, and the tunica vaginalis is as much distended as it previously had been, Dr. Porter performs the operation in the following manner:—The scrotum being shaved, an incision is made of the length above-mentioned down to the tunica vaginalis, and the part carefully examined to ascertain whether any vessel has been wounded which could possibly furnish a considerable quantity of blood. He then passes a bistoury into the tunica vaginalis at one extremity of the incision, out at the other, and divides it by a rapid withdrawal of the instrument; a tent of rolled lint, moistened with oil, and secured with a ligature, so as to be easily withdrawn, is introduced, and the operation is then completed, the patient being placed in bed. On the succeeding day Dr. Porter generally takes from ten to fourteen ounces of blood from the arm, especially if the scrotum is red and shows a tendency to inflammation. The tent is left to become loose, and drop out of itself, which usually takes place on the third or fourth day, and need not be replaced; but it is desirable to break up any adhesions that may be formed between the lips of the wound, and to introduce the finger occasionally into the cavity of the tunica vaginalis until the sixth, after which it may be treated with light superficial dressing, and the cure is generally perfect in about three weeks.

Dr. Porter informs us that he was at first in the habit of plunging the bistoury at once into the tumour, and completing the incision to the requisite extent, by making it cut its way outwards rapidly and at once. The objections to this method, however, are, that in some instances the fluid becomes extensively infiltrated in the cellular tissue, and in one case he found that considerable hemorrhage from the division of a tolerably-sized vessel in the scrotum took place into the sac, giving rise to severe and troublesome after-consequences.

The operation as now recommended is described to be scarcely more painful than the ordinary puncture by a trochar, and, if carefully performed, free from the possible occurrence of any untoward accident; it is decidedly more exempt than that by injection from inflammation and suppuration of the cavity, with all its unpleasant consequences, and the cure is perfected much more rapidly than by other modes of radical treatment.—*Prov. Med. Journ.*, July 24, from *Dub. Journ. Med. Sci.*

49. *Necrosis in the Long Bones.*—Mr. W. S. OKE, in a paper on this subject, in the *Prov. Med. & Surg. Journ.*, July 24, 1844, remarks:—

“When, from whatever cause, a portion of the internal structure of a bone becomes disorganized, and loses its vitality, a curative process is at once set up by the surrounding sound parts, deep-seated, severe and continued pain is felt in the bone affected, depriving the sufferer of his rest, and making sad havoc with his general health.

“The surgeon examines the limb again and again, searching for some deep-seated abscess, but he finds none. Leeches, fomentations and cataplasms are applied without effecting any mitigation of the pain; and the only remedy which affords some degree of relief is repeated doses of laudanum.

“After a while the periosteum is thickened, and the shaft of the bone becomes sore under pressure, and enlarged by the deposit of new bony matter around the dead or disorganized part. At length a small abscess is felt under the integuments, which makes its way through them, and gives relief to the patient.

“Upon a careful examination the abscess is found to communicate through an opening in the new bone, which is like the perforation of a gimlet, with the cavity in which the sequestrum lies. If the blunt end of a probe be bent at an obtuse angle, and introduced through the perforation, we shall be enabled to ascertain the directions which the cavity takes; and by turning its blunt extremity upwards, supposing the limb to lie horizontally, we shall at once bring it into contact with the bony roof of the cavity, which is, in fact, the internal surface of the new bone.

“We are thus made acquainted with the true state of the case, viz., that disorganization had taken place in a portion of the internal structure of the bone; that suppuration had necessarily followed; and that the new bone, deposited around the dead portion, had been perforated in order first to evacuate the matter, and, secondly, the opening having been gradually enlarged, to allow of the sequestrum being thrown off.

“This is precisely what takes place in the soft parts, when there is loss of vitality in some portion of the subcutaneous cellular tissue. Here we have severe pain, throbbing, redness and thickening of the integuments, and suppuration beneath them, when, as it were, all at once a small opening takes place through the integuments, which discharges a fetid matter, and, gradually along with it, the sloughs of the tissue.

“Necrosis is more frequently met with in children and young persons; and the tibia is most commonly the seat of the disease. The other cylindrical bones are also sometimes similarly involved.

“In the treatment of these cases, the indication clearly is to enlarge the aperture, in order to remove the sequestrum. The sooner this is done the better. We shall be justified in doing it even before any natural opening has been formed, provided we are confident as to the nature and situation of the disease, upon the same principle that we are called upon to cut through aponeurotic texture for the outlet of pus confined beneath it; but if we are not sufficiently certain of our

diagnosis, (and this will generally be our position,) we are to wait till the bone has been naturally perforated—no longer, because, if we permit the disease to go on without enlarging the opening, the bone, from being constantly exposed to the matter accumulated in the cavity, will probably become more extensively disorganized, and the result will be, that instead of being able to remove the disease by one perforation of the trephine, we shall be under the necessity of making several more.

“As soon, then, as a cavity in the internal structure of a bone is discovered, for example, of the tibia, the limb being laid upon a pillow and firmly steadied at the knee and ankle, a conical incision is to be made through the orifice of the abscess down to the bone, and sufficiently long to allow the integuments to be dissected up, and the bone laid bare as far as the disease extends, which can generally be determined by the morbid condition of the periosteum, and by our exploration of the cavity below. If there be more than one aperture in the bone, the dissection is to be continued till the whole of them be fairly exposed.

“Should we find only one, and that leading to a transverse or very limited cavity, the removal of a single circle of bone might be sufficient, which is to be sawed out by a moderately-sized conical trephine, cutting at its side as well as at its extremity; but if the cavity be found to extend longitudinally down the shaft, or if there be several openings, then so many circles are to be sawed out as the extent of the disease shall require. The intervening bridges of bone may be removed by Hey’s saw, or, what is better, they may be cut out by a small chisel, and the gentle stroke of a mallet.

“The cavity being freely exposed, the sequestrum, if loose, is to be removed at once; if not, it must be left to be disposed of by the natural process.

“If the cavity consist of carious bone, which will sometimes be the case, the diseased surface of the cavity should be cleared away by a sharp gouge, after the manner recommended by Mr. Hey.

“We shall occasionally find that the cavity contains a sequestrum, extending to a considerable length both above and below the aperture, which, therefore, cannot be extracted through it. Under these circumstances the sequestrum is to be cut across in the open space we have made, which will enable us to draw out first one end, then the other.”

50. *Compound Fracture of the Tibia during pregnancy.*—Mr. HAWKINS, in a report in the *Prov. Med. & Surg. Journ.*, June 5, 1844, of surgical cases occurring in the Cheltenham Hospital, relates one of a compound fracture of the right leg, a little below its middle, in a woman thirty-six years of age, in the eighth month of pregnancy. The accident was occasioned by a sudden twist in getting out of bed. The fracture was very oblique, and nearly an inch of the tibia protruded through the wound. Reduction was, however, effected without difficulty, and the limb placed in a fracture-box. Five weeks from the receipt of the injury the bones had firmly united, and a few days afterwards the patient was delivered of a fine healthy female child.

51. *Dissecting Aneurism of the Aorta, Innominata and Right Carotid Arteries.* By R. B. TODD, M. D.—A stout, plethoric man, æt. 37, was suddenly seized, while dining at a friend’s house, with syncope, from which he soon recovered. His symptoms at this time were, violent pain in the loins, down the course of the ureters, thighs and abdomen, with some tympany and swelling of that region, nausea and scanty urine. Notwithstanding depletion, local and general, purging and diuretics, the kidneys ceased to act, and other signs showed themselves. He became paralytic of the left side: the pulse of the right side was distinctly smaller and weaker than that of the left: there was bellows sound in the course of the aorta and innominata, and the breathing in the right lung was less audible than that of the left. There was also great drowsiness and sluggishness, indicating oppressed brain.

About the fifth or sixth day the secretion of urine returned, but the cerebral symptoms showed but trifling signs of amendment. The pupils, which had

before been unequal, became equal, and some power returned to the paralyzed side; but the pulse began to falter, and signs of an internal hemorrhage manifested themselves, and on the eleventh day from his seizure he expired quite suddenly.

A copious effusion of blood was found in the pericardium; this had escaped through a little fissure in the outer coat of the aorta, which formed the external ovule of a recently formed aneurismal sac. This sac communicated with the aorta through a transverse rent in its inner and middle coats, which originated in an ulcerated ætheromatous spot. The blood which thus escaped from the artery made a new channel for itself along the aorta, and also along the innominate and right carotid arteries, by splitting the middle tunic of those vessels into two laminae. The separation took place in the carotid, to some distance up the artery, and was then stopped, the consequence of which was the plugging up of that artery, and the cessation of the circulation in it.

The right hemisphere of the brain was exsanguineous, and all that part of it which is above the fissure of Sylvius (which is supplied with blood by the middle cerebral artery) exhibited numerous patches of softening without discoloration, affecting the white matter as well as the gray substance of many of the convolutions. This softening Dr. Todd attributed to the stoppage of the circulation in the right carotid artery, the vertebral not being able to render its full share of blood, owing to the diminished calibre of the innominate and subclavian. The kidneys were in the second stage of granular disease. The temporary cessation of the action of these organs was doubtless due to a temporary impediment to the full flow of blood to them. The paralysis and the somnolency were clearly to be attributed to the physical alteration in the right hemisphere of the brain.—*London Med. Gaz.*, June, 1844.

52. *Crural Hernia successfully operated on after twenty-nine days strangulation.*—This operation was performed by M. STEINBRENNER. The tumour was of a livid red colour, and there had been frequent vomitings, constipation, and griping pains during the whole period; the debility was extreme. When the loop of intestine was exposed, it appeared of a deep brown-red colour, without a trace of gangrene; and after being freed, was easily reduced. Two hours afterwards the bowels were relieved; the symptoms subsided, and a rapid cure was obtained.—*Journal des Connaissances Medico-Chirurg.*, Oct., 1843.

53. *Contributions to the statistics of Tracheotomy.*—Dr. JAMES WATSON, physician to the Glasgow Royal Infirmary, relates, in the *Lond. and Ed. Monthly Journal of Medical Science*, three cases which recently occurred in the clinical wards under his charge, in which tracheotomy was performed. The propriety of this operation seems to be doubted by so many surgeons that it is extremely desirable to collect its actual results, as it is on such evidence only that this indecision can or should be removed.

The cases in question were three; in two of them the operation was perfectly successful, in the third the patient died. The patients were all adults, and their symptoms remarkably similar. Their disease was somewhat of the character of chronic laryngitis, but connected with syphilitic sore throat, and partaking latterly of a more acute character, involving the immediate safety of the patients, probably in consequence of cold. This complication with syphilis, affording the hope that much of the chronic constriction of the glottis might be occasioned and kept up by irritation extending from the ulcerated fauces without seriously implicating the respiratory apparatus farther down, was supposed to hold out a reasonable prospect of the operation not only prolonging the patient's life for a few days, but even of contributing towards the final and complete restoration of health.

In the fatal case Dr. Watson regrets that the operation had not been performed earlier. "Had this been done," he observes, "I have no doubt, from the state of the trachea, and even of the lungs, that the issue would have been equally successful as in the other two. The trachea was sound; and the con-

gested state of the lungs would in every likelihood have been got rid of, when the obstruction to the ready admission of the air was removed."

Dr. Watson concludes his paper with the following remarks:—

"1st. That it is important practitioners should bear in mind that, in syphilitic sore throat, the upper part of the larynx is apt to become the seat of disease as well as the fauces; and that hence the most grave consequences to the patient are to be dreaded. The progress towards such a state is generally slow, but may at any time be developed or accelerated by cold. A watchful care, therefore, ought to be exercised over patients whilst in this hazardous position; and if such an extension of the disease should take place, so as materially to impede respiration, thus placing the patient's life in danger, and speedy benefit be not derived from more ordinary curative means, the trachea ought to be opened, in the full assurance that, if done before the powers of life are not too far exhausted, a successful issue may be counted on.

"2dly. That even where, from neglect, or the opposition of the patient, the operation may have been imprudently delayed, we must not be too readily deterred from operating, by suspicions as to the state of the lungs, or the strength of the patient. In so far as the above cases go we are warranted in operating, even although appearances should be very unfavourable. In all of them, the dyspnoea had been great for weeks,—the threatening of suffocation for the last few days had been extreme,—and in two, the pulse was very quick, and the debility alarming. Yet two out of the three recovered without any bad symptoms, and in the third, the autopsy, as already remarked, discovered nothing to forbid the operation.

"3dly. In these and similar cases, it is unquestionably a most important circumstance, in reference to the propriety of operating, that the affection of the glottis is the consequence of an irritation descending from above. This circumstance places a clear line of demarcation, in point of prognosis, between such a class of ailments and those others in which occlusion of the rima glottidis is either subsequent to, or nearly simultaneous with, diseased states of the trachea and bronchi, as is not unfrequently, if not always, the state of matters in the ordinary chronic laryngitis of adults, and the acute laryngitis of young subjects, usually called croup. In such cases, the same success is not to be anticipated from bronchotomy. In ordinary chronic laryngitis, life, perhaps, may be prolonged, by the operation, for a few days or weeks, but this disease seldom exists without incurable derangements of the bronchi and lungs accompanying, if not preceding, and altogether irrespective, in their origin and progress, of the constriction of the glottis. And as there can be no change of circumstances effected by the operation calculated to arrest or remove states not dependent on such constriction, so it must happen that surgical interference can do nothing more than very triflingly postpone, if by its shock it do not actually hurry, the otherwise inevitable fate of the patient.

"Neither can I see any thing in bronchotomy calculated to benefit the patient in common croup. This is not a disease of the rima glottidis merely, but when at all severe, nearly simultaneously of the trachea and bronchi to their minutest ramifications. No doubt, from the smallness of the rima, and, indeed, of the whole trachea in children, the suffocative symptoms are the most striking, but the disease would be quite competent to kill, if we could suppose such a case, although the rima were not at all obstructed, from the immense extent of the inflammatory irritation, and the barrier presented by the false membrane to the due oxygenation of the blood. And although convalescence in some cases is connected with the expulsion of this false membrane, yet this event is rather the consequence of a return of the bronchial surface to a healthy state than a cause. The powers of the constitution or judicious treatment may have affected this amelioration; and whether the operation were performed or not, the issue would have been the same. The membrane, if disengaged from the bronchial surface, would be easily expelled; if not disengaged, the operation could do nothing towards facilitating this expulsion, and even little towards admitting the air into the bronchi, at least so as to act beneficially on the system. I am afraid, in

most cases of this description, I would almost say in all, the operation can only add a frightful and most annoying aggravation to the suffering of the little patients. I have now been party to three or four operations in cases of common chronic laryngitis and croup. The patients all died, and I am persuaded that it would be well were the profession to repudiate bronchotomy in these diseases, especially in the latter. Its being mooted at all as a possible means of giving relief, places the whole parties concerned in a most unpleasant attitude, viz., of hesitation between a desire to leave nothing undone, and a resorting, on the merest chance of benefit, to an operation which, in nineteen cases out of twenty, will do harm, by increasing the bronchial irritation,—not in one case in a hundred will it ever do good, and the want of success in such unsuitable cases, prevents its adoption in others where the probability of its being of use might be greater.

“4thly. Were I making an exception to the above general rule, it would be in respect of laryngitis in young subjects, consequent on diphtheritic affections of the fauces, and in scarlatina anginosa. I look upon such cases as in some respects resembling those which are the subject of our present remarks, more especially in the important particular of the glottis being affected in consequence of an extension of the disease from above, and the probability being great that the affection of that part, although sufficiently severe to implicate the immediate safety of the patient, might not be accompanied by an equal amount of disease in the trachea or bronchi:—thus differing from common croup, where, in urgent cases, the whole lining membrane of the larynx, trachea and bronchi, is nearly simultaneously and equally affected. I only recollect one case, however, in which this operation was performed in such circumstances. It occurred to me, so long ago as June, 1821, but, though the interesting nature of the case was sufficient to impress its circumstances deeply on my recollection,—its having been the occasion of suggesting to my mind a mode of treatment, in such diseases, which has since, in my own hands and in those of many others, done much good, has contributed to fix it still more deeply. It was a fine boy of about eleven or twelve years of age. He had this diphtheritic affection of the fauces, and it spread to the glottis. The distress was so great that tracheotomy was performed. He was greatly relieved by the operation, and lived after it ten days, when he died very unexpectedly, after giving good hope of a complete recovery. Erysipelas seized the wound and its neighbourhood, from which he almost immediately sank. On reflecting on this case, after the patient's death, it struck me that caustic applied to the diphtheritic spots on their first appearance, might have cured them, or checked the tendency of the diseased state of the mucous lining of the fauces to spread, and as the solid caustic would have been inconvenient, from the irregularity of the surface to which it required to be applied, I naturally concluded that this would have been easily effected by dissolving the caustic and applying it by means of a small brush. So far as I know, this was the first time this simple and obvious remedy was thought of in such cases. I henceforth used it myself wherever it was indicated, and recommended it to all my medical friends. Since then it has come into common use, and I believe has cut short many such affections, and by preventing extension to the larynx, removed the necessity of having recourse to tracheotomy. Where, however, such an extension does occur as I have already mentioned, I think this operation holds out much hope, not only of warding off immediate dissolution, but of contributing to an ultimate cure. The inflamed glottis is allowed to rest from the forcible attempts to respire through an insufficient aperture,—the system is delivered from the depreciation of all its functions, caused by imperfect æration of the blood,—time is allowed for the application of suitable remedies to the mucous lining of the fauces, and judging from analogy, any existing affection of the lungs, being only consequent on the disturbed state of the parts above, is likely to subside with the removal of the exciting cause, the patient's restoration to health becoming highly probable.

“5thly and lastly. The rapidity of the convalescence of the successful cases deserves notice. In a month, Esplin was dismissed cured; and Mary Campbell,

although the removal of the tube would have been imprudent, could breathe and speak tolerably by the glottis, and the ulcerations of the tonsils and soft palate were cicatrized. Yet in both these cases the affection of the throat was of six months' duration, the ulceration extensive, and the occlusion of the glottis extreme. No doubt this rapid restoration, for it was too rapid to be the result of the medical treatment, was greatly owing to the parts being relieved from the incessant coughing, straining for breath, and retching to clear the glottis from obstructing mucus, incident to the state of the patients before the operation; but also, and I have no question, mainly in regard of the ulcerations, from the constitution being delivered from the pernicious effects of the state of slow asphyxia to which these individuals were subjected from these unfortunate circumstances."

54. *Danger of allowing a Catheter to remain for a long time in the Bladder.*—Scarcely a year passed that Dupuytren had not occasion to exhibit to his numerous pupils one or two examples of perforation of the bladder and fatal effusion of urine, resulting from a gum-elastic catheter allowed to remain permanently in that organ. Dr. Rognetta has twice witnessed the autopsies on such occasions. If the catheter is too long, or introduced too far, or certain dynamic conditions exist in the tissues of the organs, the beak of the instrument presses on the posterior parietes of the bladder, an eschar is produced, followed by an opening through which the urine flows into the peritoneal cavity.—*Annales de Thérapeutique*, July, 1843.

55. *On Lithotomy.* By B. B. COOPER.—Almost every surgeon of repute has some peculiar mode of his own for the removal of a calculus from the bladder. The organ has been attacked at all approachable points, and by every variety of instruments, from the most simple to the most complex. It signifies but little what kind of instruments are used, providing they are directed by the hand of a skilful anatomist, who possesses judgment sufficient to enable him to vary his steps according to the nature of the difficulties which may exist in any case. After considerable experience, I can express my preference to the straight staff, but it must be in the hands of one who understands how to benefit by the advantages it affords.

The steps of the operation of lithotomy may be divided into four:—1st. To lay open the perineum; 2d. To lay open the pelvis; 3d. To lay open the bladder; 4th. To extract a stone.

In the first of these steps, if the straight staff be used, it must be recollected that it cannot be brought to a right angle with an horizontal line, as the curved instrument can, but only to the angle of 45° , beyond which it should not be attempted to be raised, as its point is liable to be drawn out of the bladder. Nothing untoward can occur during the performance of this step, unless from an unusual size of the superficial perineal artery or one of its branches, which may be required to be secured with a ligature. The principal point to be observed in the second step, is the opening the urethra at its membranous part, avoiding, as much as possible, the bulb and its large artery. It is in this incision the surgeon may wound the rectum, but which may be always avoided by the oblique direction of the incision towards the tuberosity of the ischium, as well as by the precaution of having the bowel perfectly emptied of its contents. Notwithstanding every precaution, the artery of the bulb is sometimes wounded, and is not easily secured, on account of its death and tendency to retract. Mr. Travers in such a case arrested the hemorrhage by making a piece of cork press on the internal pudic artery over the spinous process of the ischium. In this step, the depth of the parts appears much greater when the straight staff is preferred to the curved; but this apparent difficulty is really an advantage, as the artery is not so much pressed forward in the way of the knife.

The parts divided in the third section consist of the urethra, prostate gland, and the fibres of Wilson's muscle on the left side. The principal point to be attended to in this step is, not completely to divide the left lobe of the prostate

gland, for if its fascial covering be cut through, urine is sure to escape into the cavity of the pelvis, which is the most frequent cause of death after lithotomy.

The fourth step of the operation is the introduction of the forceps, and the removal of the stone; in effecting this object, numerous difficulties may present themselves, from the position, size, form and composition of the stone,—each of which can only be overcome by the surgeon's judgment and *tact*. The great source of danger, in this operation, arises from too free an incision through the prostate gland, giving rise to extravasation of urine into the cavity of the pelvis; the propriety, therefore, of making a small opening with the knife or any other cutting instrument, through the prostate, is very manifest. When the surgeon has cause to suspect that the stone is too large to be removed by the incision of the lateral operation, he should be prepared with instruments to break it into two or three pieces, so that he may not be under the painful necessity of submitting his patient to the objectionable operation, *à deux temps*.

The operation of lithotomy sometimes requires to be repeated, although every caution has been exercised to ensure the removal of all trace of the first calculus. The late Sir A. Cooper more than once operated a second, if not a third time. I have myself performed the operation three times on the same individual, in a period somewhat short of four years; he is still alive, and has been free of any complaint since the date of the last operation, (a period of twelve years.) Some lithotomists think that the incision should be made on the right side of the perineum in second operations, but this I consider to be both unnecessary and inconvenient.

Patients should not be kept on very spare diet after the operation; it must never be forgotten that the constitutional vigour cannot be diminished without increasing the irritability of the system. I am quite sure that one of the greatest modern improvements in the treatment of patients who have undergone surgical operations, is with respect to the better diet which is early prescribed; and hence, I believe, the greater comparative success of operations in this beyond that of any other country.—*Guy's Hospital Reports*, Oct., 1843.

56. *Fibrous Tumours of the Mammæ*.—In the early part of last January, M. CRUVEILHIER read before the French Academy of Medicine, a memoir on fibrous tumours of the mammæ, which contained views so contrary to the current opinions of the day, as to have given rise to a very warm and lengthened discussion, in which the most distinguished members of the above-named learned body took part. We take from a late number of the *Lancet*, the following translation of the report of the memoir and of the debate.

M. Cruveilhier commenced by stating that in the memoir which he was about to read, he should endeavour to prove that the breasts were very frequently the seat of fibrous tumours, although their existence in this region was not noticed by Sir Astley Cooper or by Boyer, in their treatises on the diseases of the mammæ; that these fibrous tumours never degenerated; and that, being a purely local affection, they did not form again when once extirpated, so that their extirpation was not *necessarily* indicated.

Fibrous bodies, says M. Cruveilhier, were confounded with various other abnormal organic productions, under the names of scirrhus, cancers, polypi, until the researches in pathological anatomy were made which signalize the commencement of this century. Fibrous bodies of the uterus were first accurately described by Bayle, but he fell into the error of considering fibrous growths as confined to the uterus. Fibrous tumours may be formed in two ways; they may either spring from membranous surface, such as the periosteum of the nasal fossæ, or they may originate in the centre of an organ, such as the uterus, the mammæ, the ovaries, or the testicles.

Fibrous bodies are generally spheroidal; their surface is sometimes regular, sometimes mamillary or lobulated. Their volume is variable. With the exception of those which rise from a membranous surface, they only adhere to the tissues in the midst of which they develop themselves by loose cellular tissue, so that they are easily enucleated. The density of the tissue of which they are

formed is very great, indeed, it is nearly of a cartilaginous texture, being composed of albugineous particles linearly disposed, strongly pressed against one another, interwoven in various directions, and often divided into several groups in such a manner as to constitute distinct lobuli. These fibrous formations possess veins, which originate in their centre by very small veinules, the trunks creeping on the service. No arterial vessel, no lymphatic or nerve, can be traced in their proper tissue. Fibrous bodies, therefore, present no other organic element than fibrous tissue animated by veins. Their life is thus reduced to obscure nutrition, the agent of which is venous blood agitated by an oscillatory motion necessarily very slight.

From the first period of their existence, fibrous tumours offer the characters which they will offer when fully developed. A fibrous tumour of the size of a cherry presents the same density of structure that we observe in one of the size of the fist or of the head. Sometimes these tumours are of a cartilaginous or osseous character from their origin.

Fibrous bodies only inconvenience by their volume and their weight; they are inoffensive parasites, which merely slightly modify the circulation and nutrition of the surrounding tissues. They are not themselves susceptible of many consecutive changes. They may increase indefinitely, remain stationary, or even undergo a kind of atrophy. They may become crusted with or penetrated by calcareous matter; they may also become the seat of œdema, in which case the tumour is often penetrated by a fluid resembling synovia; but they are incapable of cancerous degeneration; indeed, there is incompatibility between fibrous productions and cancerous degeneration.

Such are, according to M. Cruveilhier, the general characters of fibrous formations. Do they apply to some of the organic productions which are observed in the mammæ? M. Cruveilhier believes that they do, founding his views on a number of cases of clinical observation and on some facts of pathological anatomy.

The mammary gland presents, continues M. Cruveilhier, a structure which is highly favourable to the development of fibrous tumours, being composed of adipose tissue, of granulations, and of cellular and fibrous tissue. The fibrous bodies of the mammæ present themselves under the form of small spheroidal tumours, of a volume which varies from that of a millet-seed to that of a fowl's egg, or above. Their surface is sometimes smooth, sometimes mamillary; their hardness is extreme, occasionally like that of a stone. These tumours are generally subcutaneous, but may develop themselves in the interior of the mammary gland; they are exactly circumscribed, quite distinct from the tissue of the gland, to which they only adhere by loose cellular tissue. They offer the mobility of a lymphatic ganglion, and roll, as it were, under the fingers, whence the popular term of *glands*.

Thus the characteristic features of fibrous bodies of the mammæ are,—spheroidal shape, perfect circumscription, mobility, and independence of the tissue of the organ in which they appear.

Fibrous tumours of the mammæ not having been yet distinguished, either clinically or anatomically, from other tumours of the breast, and more especially from cancerous tumours, they are treated in the same manner as these latter lesions, by extirpation. It is generally asserted that the tumours, vulgarly called glands, may exist for a greater or less length of time without degenerating, but that when women reach the age of forty-five or fifty they then, nearly always, increase rapidly, infect first the adjoining tissues and then the entire economy, presenting all the characters of incurable cancer. The result of such ideas is, that the extirpation of the tumour is nearly always proposed, and accepted as soon as the terrible word cancer is pronounced.

M. Cruveilhier states that the first doubts as to the nature of these tumours arose in his mind about fifteen years ago, owing to his having met with several of these indolent rolling mamillary tumours in one or both breasts, in young girls scarcely arrived at the age of puberty, and in young women full of health and vigour. It then struck him as strange that tumours such as these, generally accidentally discovered, should be cancers in the first stage. His doubts became

still more confirmed from the circumstance of the tumours of several of these females, who had refused to submit to any operation, not undergoing any increase in size, and not degenerating, although some had had children and suckled, and others had passed the critical period of life, and also from the circumstance of several of his patients in whom such tumours had been extirpated not having had any return of the morbid growth.

Having examined a great many mammary tumours extirpated by various surgeons as cancerous, he had found that a certain number presented all the anatomical characters of fibrous bodies above described, and not those of cancer. Whilst thus studying the anatomical characters of tumours of the mammæ he had met with a remarkable pathological disposition. He had found that a certain proportion of these fibrous bodies, instead of being full, as they at first appeared to be, were hollow, and sometimes contained a viscous synovial kind of fluid. He had several times found mammary fibrous tumours, which had rapidly attained a large size, and which, on that account, had been extirpated, saturated with a viscous fluid, exactly like uterine fibrous formations.

M. Cruveilhier ended by relating the following case:—Fifteen years ago, a lady, forty years of age, consulted him about several tumours which she had had in the breasts since the age of puberty. Her general health was good, and her complexion fresh and healthy. There were three tumours in the left breast, of which two were as large as hen's eggs, and one in the right as large as a turkey's egg. These tumours were perfectly distinct, of a stony hardness, lobulated on their surface, rolling underneath the skin, and perfectly independent of the mammary gland. For some time the *embonpoint* of the patient had been increasing, and she fancied that the tumours had likewise increased in size. She had been advised to submit to an operation. Looking upon these formations as of a fibrous growth, M. Cruveilhier told her not to pay any attention to them, and not to feel uneasy, as they were neither of a cancerous nature nor susceptible of degeneration. Unfortunately she did not follow this advice, but consulted a practitioner, who fancied that by the application of leeches, the use of baths, and very low diet, he could bring about the resolution of the tumours. After undergoing this treatment for eight months, this lady, who had become excessively debilitated, was seized with erratic erysipelas, which, after running over the entire surface of the body, fixed itself on the right mammæ, and gave rise to a phlegmonous abscess, under the influence of which she sunk exhausted.

At the post-mortem examination all the internal organs were found healthy. The mammary tumours, as movable as when M. Cruveilhier first examined them, were only found to adhere to the gland by loose cellular tissue, and were enucleated with ease. The texture of these tumours was extremely dense, and presented none of the characters of cancerous tissue. The strongest pressure did not give rise to any oozing of fluid or of cancerous substance. Dissection showed that the tumours were formed by a multitude of granulations firmly pressed one against the other, sometimes adhering, sometimes free.

M. Blandin opened the discussion by stating that the memoir which M. Cruveilhier had read before the academy deserved serious attention and discussion, inasmuch as the treatment of tumours of the breast at present resorted to by surgeons, must be completely modified were the profession to accept his ideas, which may be thus resumed:—*That fibrous tumours were very frequent in the mammary region; that they never degenerated into cancer; that they may be diagnosed with certainty; and lastly, that they ought not to be extirpated.*

He did not believe, for his own part, that fibrous tumours were common in the mammary region; a number of tumours thus termed by some surgeons were merely cancers in a state of crudity, scirrhus more especially presenting this fibrous hardness in the first period of its formation. He differed also from M. Cruveilhier in his anatomical premises. He did not think that the breast contained naturally much fibrous tissue; it contained considerable masses of condensed cellular tissue, but no truly fibrous tissue. M. Cruveilhier also stated, as a proof of the fibrous nature of these tumours, that they did not return when extirpated; but that was admitting that really cancerous tumours always did

reappear under such circumstances, a doctrine which he was not prepared at all to admit, which, indeed, he repudiated with all his might. As to fibrous tumours not degenerating, such an opinion was contrary to reason and contrary to facts. Normal fibrous tissue degenerated, as was proved every day by the fungous growths of the periosteum and of the dura mater, and why should not accidental fibrous formations? Moreover, he had seen fibrous tumours of the uterus which had undergone a true cancerous degeneration, and similar instances had been mentioned by Dupuytren at his clinique. He admitted, however, that such degeneration was exceptional, and that fibrous growths generally remained stationary, or merely underwent a petrous transformation.

He did not think either that it was possible to diagnose during life fibrous bodies of the *mammæ* from other tumours, as M. Cruveilhier asserted. The characters which he had assigned to them also belonged to encysted cancerous tumours. This being the case, how was it possible to distinguish one from the other, the more so as both might be extirpated without much chance of reproduction. He believed that the distinction was only possible with the assistance of the scalpel, but such a posthumous diagnosis is of but little use towards solving the question which was then being discussed.

Not believing in the possibility of an accurate diagnosis, and admitting the possibility of the degeneration of fibrous bodies themselves, he could not agree with M. Cruveilhier as to the impropriety of extirpating the tumours which he had described. Encysted cancerous tumours might, like fibrous tumours, remain for years indolent, but if not destroyed they became at last painful, increased with rapidity, and infected the economy. He had operated for a large encysted encephaloid tumour of the breast which had remained small, indolent and stationary for twenty years. He thought that extirpation ought to be the rule, and the expectant system the exception, and that the reason why now operations for these forms of cancers were scarcely ever successful, was because the operation was generally deferred too long. He was afraid that the opinions of M. Cruveilhier would do much mischief if they were adopted by practitioners generally. Finally, he believed that fibrous tumours of the *mammæ* were very rare, especially if compared with other tumours of the same region; that they were susceptible of cancerous degeneration, although such a termination seldom occurs; that they could not be accurately diagnosed, and that consequently they ought to be extirpated as well as encysted cancers, with which they had the greatest symptomatic analogy.

M. Rochoux regretted that M. Cruveilhier had not examined more attentively the structure of the different tumours of the breast. In the present state of science examination with the naked eye was insufficient; recourse must be had to the microscope. With its assistance the organization of these tumours might have been more efficiently analyzed. He himself had studied fibrous texture with the microscope, and had found it extremely difficult to distinguish natural fibrous tissue from cellular tissue. Nothing could be more confused than accidental fibrous tissue; the fibres were so interwoven that it was impossible to follow them.

M. Gerdy thought that in some cases fibrous tumours of the breast might be diagnosed, but the diagnosis was always difficult. The surface of cancerous tumours, when compression is used, becomes covered with slight depressions, owing to an alteration of the cellular tissue. As the disease advances the nipple is drawn inwards, and the tumour is the seat of lancinating pains. Sometimes, however, the anatomical characters above enumerated exist without there being any pain. In all these cases an operation should be resorted to. Operations performed on the breast ought not to be considered as very serious; they were much less so than amputations of the limbs, which always presuppose deep-seated alterations of the osseous system. If a mammary tumour presented none of the above symptoms; if it was movable, indolent, and did not increase in size, he did not think it necessary to operate. He knew an unmarried lady who had borne, for twenty years, a benign tumour of this kind which had never progressed.

M. Velpeau agreed in some respects with M. Cruveilhier. It was an undeniable fact that there were non-cancerous tumours of the breast, and that many of these were fibrous, but he did not think that all those which M. Cruveilhier had described as fibrous were really such. There was a peculiar kind of tumour which he had called *fibrinous*, and which was formed by the organization of blood, or any other fluid which might have been extravasated in the mammae subsequently to a blow, to a contusion, or during menstruation, &c. M. Cruveilhier appeared to have comprised these tumours among his fibrous formations. He was led to believe that this was the case because they were very frequent, and differed in all their characters from cancerous tumours; but they also differed from fibrous tumours. He thought that there was a distinction to be established between fibrinous tumours on the one side, fibrous tumours on the other, and the four forms of malignant growths recognized by Laennec, by Bayle, and since that by all anatomo-pathologists, viz., encephaloid, scirrhus, melanoid, and colloid growths. All these forms of tumours were notably different one from the other. The individual characters were not sufficiently distinct to enable us always to distinguish them during life; but they were extremely easy to recognize by their microscopic peculiarities. The most recent microscopic researches, more especially those of MM. Vogel, Müller and Mandl, had much contributed to enlighten the pathological anatomy of these tumours. Their characteristics might be reduced to this: in fibrous tumours the microscope only shows fibres and fibrilli. In the four forms of cancerous tumours which he had mentioned, there were cells, globules united so as to form alveoli. There was, therefore, a fundamental difference in the primitive and intimate organization of these tumours; moreover, the former were not susceptible of degeneration, whereas the latter always degenerated. In this he agreed with M. Cruveilhier. Can, however, these different forms of tumours be recognized in the living subject? In well-marked cases he thought it possible, but in many circumstances nothing could be more difficult. The globular shape and isolated state which M. Cruveilhier had given as distinctive characters were sometimes observed in colloid and encephaloid tumours. If, however, tumours presenting these characteristics were observed in young women, there was every reason to suppose that they were fibrous or fibrinous, and not cancerous, cancerous formations, as every one knows, not often developing themselves in young women.

In the course of the discussion it had been stated that fibrous tumours were capable of degenerating, and that there had been cases of fibrous bodies of the uterus which had thus degenerated. Now, he did not know of any one well-authenticated case of such a transformation. Either the tumours which had degenerated were not fibrous, or the degeneration was not of a cancerous nature. All tumours had their peculiar characters; they constituted distinct *individualities* which were not transformable one into the other. They had not the same characters, the same progress, the same termination. He did not mean to say that the degeneration of fibrous tumours was altogether impossible, because it was impossible to limit the operations of the human organization; but he must say that if degeneration under such circumstances had ever taken place, it must be looked upon as quite an exception.

M. Cruveilhier did not appear to have sufficiently considered the question of treatment, when he stated that these tumours were not to be extirpated if recognized. Although thus condemning the operation, he proposed no other means of cure. It would have been better had he endeavoured to arrive at some practical result on this point. As to the really cancerous tumours, there was but one plan of treatment, and that was extirpation. There were many cases on record of cancerous tumours cured by other means, but he did not believe that there was one really authenticated instance of such a cure in the annals of science. There was great difference of opinion between surgeons and physicians with respect to the propriety of operating for cancer. He believed there was exaggeration on both sides. There could be no doubt that the operation was sometimes successful. He himself had amputated, eight years ago, the breast of a lady who had borne an enormous ulcerated encephaloid tumour of the breast for several

years. There had not been since then the slightest relapse, and the health of the patient was perfect. This case alone would suffice to decide the question. Cancer left to itself was necessarily a fatal disease; the operation was sometimes successful; therefore it must be performed, and that as early as possible, before it had acquired great development, and had infected the economy. M. Velpeau concluded by thus resuming his opinions on the subject:—

There are fibrous tumours of the breast which do not endanger the life of patients, and which are not liable to degenerate. But, as generally speaking, we are doubtful as to the true nature of such tumours, as their presence is a perpetual source of anxiety and torment to the females who are affected with them, as the operation by which they are extirpated is nearly always an “innocent” one, there is no reason why we should hesitate to extirpate them.

M. Cruveilhier replied, that he congratulated himself on having originated the discussion, as through it a most important fact had been established, viz., that there existed fibrous tumours of the *mammæ*. Henceforth, whenever a diagnosis of a tumour of the breast had to be made, it would be necessary to take into consideration the possible existence of a fibrous growth. He was sorry, however, to find that he differed with his colleagues on most other points. He thought these tumours of frequent occurrence. M. Blandin thought them very rare. He thought it generally possible to distinguish them from other tumours; this was denied. He could only answer that on these points he formerly entertained the opinions which had been emitted during the discussion; he should then have said, with M. Blandin, that fibrous tumours were rare, difficult, if not impossible to diagnose, and could degenerate. But for the last fifteen or twenty years his attention had been particularly directed to the study of this question, and he had finally arrived at the conclusions contained in his memoir.

It had been said that fibrous tumours were merely the germs of cancers. During the eight years that he was physician to the Salpêtrière,* he had met with fibrous tumours of the breast in women eighty years of age, nearly all of whom had borne them since their youth. If they were cancerous germs they were rather old ones. He believed that in pathology there were laws of coincidence and laws of exclusion, with reference to certain diseases. Such an exclusion existed between fibrous and cancerous tumours. He had never seen at the Salpêtrière cancer supervening in old women who presented fibrous tumours of the uterus. This law of the incompatibility of the two diseases had appeared to him so universal, at least for the uterus, that he had felt authorized in telling persons who came to consult him for fibrous tumours of that organ, that they never could have cancer. He admitted, with MM. Rochoux and Velpeau, that the microscope was calculated to throw additional light on the subject, and was sorry that his leisure had not allowed him to have recourse to that source of information. As to the difficulties of the diagnosis, he did not attempt to deny them. However much the art of diagnosing tumours of the breast was improved, there would always be doubtful cases, and in such cases he agreed with MM. Gerdy and Velpeau that it was expedient to operate. He would say the same of tumours of this nature which proved a continual source of uneasiness and anxiety to the women who presented them. He believed with M. Velpeau that extirpation was the only real mode of cure.

M. Moreau had seen cases analogous to those mentioned by M. Cruveilhier, and he considered that the discussion had established the fact that there were fibrous tumours to be found in the *mammæ*. He thought that when there was reason to doubt the nature of a tumour of the breast it was better to wait than to operate. It had been said that the excision of these tumours was an innocent

* The Salpêtrière is a colossal hospital or asylum situated on the outskirts of Paris, the population of which is nearly 6000. It is devoted to the pauper female insane, of whom there are 1500; to women affected with incurable complaints, or more than seventy years of age, of whom there are above 3000; and to epileptic and idiotic females drafted from other charitable institutions, or belonging to the department of the Seine.

operation. He did not think so; the slightest operation, as every one knows, might give rise to the most serious accidents.

M. Roux said that he also was of opinion that it would be unfortunate if the ideas of his honourable colleague made many partisans. Indeed, he should have been better pleased had they not gone farther than the assembly in which he spoke, as, were they generally adopted, many women would infallibly fall victims to organic diseases of the *mammæ* who otherwise might have had some chance of being saved.

An organic lesion common in its manifestation to several organs, or to the same tissue in several parts of the body, did not, however, show itself in all these organs entirely with the same characters. Thus, the fibrous bodies of the uterus, the fibrous polypi of the nasal fossæ, the fibrous tumours of the bones of the limbs, the funguses of the *dura mater*, differed one from the other. There were certain tumours of the *mammæ* which M. Cruveilhier had called fibrous, and, perhaps, according to this view, consistently, but they were very different from the fibrous bodies of the uterus.

That the breast was often the seat of non-malignant tumours had long been known, and in this respect surgery was more advanced than M. Cruveilhier supposed. These benign tumours, as they were sometimes called, had been more especially described by Sir Astley Cooper and by Mr. Travers. They were generally encysted, indolent, movable, such as M. Cruveilhier had described, and were of various kinds. There were hydatid tumours, there were tumours of a very painful nature, small, of a dense, homogeneous tissue, and of a grayish-white colour; tumours similar to the engorged lymphatic ganglions of scrofulous subjects; others difficult to describe, which had been called scrofulous tumours by English surgeons; there were simple engorgements of the mammary gland, termed by Abernethy "mammary tumours." It was all these forms of induration which M. Cruveilhier had united under the head of fibrous tumours. He saw no harm in their being thus termed, provided it were well understood that they were not all identical, and they were not of a similar nature to other fibrous formations, especially to those of the uterus. They did not present the same lamellar texture, and never became, as far as he knew, impregnated with calcareous substance. He did not, however, believe that all these forms of tumour, taken collectively, were often met with. Every year he performed, on an average, from fifteen to twenty operations on the breast, and in the course of his life had most years met with several examples of these kinds of tumours; but for the last three or four years the tumours he had extirpated had all been cancerous formations.

M. Cruveilhier had said that it was easy to recognize with the scalpel the anatomical characters of fibrous tumours on the one hand, and of incipient cancerous growths on the other. This was generally true, but still there were occasionally cases in which the most experienced surgeons remained uncertain, even after the most careful anatomical examination. As to the non-degeneration of fibrous formations, and their incompatibility with cancers, it was a gratuitous hypothesis. What cancer arises in the midst of our tissues in their normal state, and in the midst of fibrous tissues among others, and the possibility of its development in abnormal growths is denied? He thought that whatever was the presumed nature of a tumour of the breast, if it resisted all the various modes of treatment calculated to effect its resolution, it should be at once extirpated.

With regard to the question which had been raised as to the propriety of operating for cancerous tumours, and the chances of cure, his experience and opinions were decidedly in favour of operation. He thought that cancerous affections originated principally under the influence of a general cachexia, or predisposition, but sometimes, also, to a certain extent, owing to a local cause, and in the latter case they were less likely not to return when excised. He had three times extirpated on women voluminous cancers developed on the arm, where issues had long been kept up; in all the cases there was no relapse. In 1831 he was (through a singular coincidence) consulted for well-marked sarcocele by three different persons, on all of whom he excised the diseased testicle.

They were now all three in perfect health. He had even repeatedly seen the excision succeed when performed for a relapse a second or even a third time. In 1819 he amputated the breasts of two ladies for large cancerous tumours. Within the year there was a return of the disease in both instances. He again operated, and the disease never returned. One died seven years after from some acute disease, the other died only three years ago. The most rapid relapses were observed in young patients. He remembered a very striking illustration of this truth. The patient, a young woman, twenty years of age, blooming with health, had in one of her breasts a small, indolent, movable tumour, very similar, indeed, to those described by M. Cruveilhier. It was excised; very shortly afterwards the entire breast became the seat of cancerous degeneration, and she died within five months.

M. Cruveilhier was astonished, to say the least, that it should be asserted that his communication to the academy was calculated to do harm in practice. In his opinion it was not *he* who candidly brought forward the result of his studies and experience, with the view of saving unfortunate females from useless operations, that ought to be blamed, but those who, extirpating all tumours of the breast as cancerous, or as susceptible of becoming cancerous, threw, unnecessarily, consternation into families and into the minds of their patients. In the course of the discussion the existence of fibrous tumours had been admitted by every one, even by M. Roux, although his admission was qualified. The fact, therefore, which his personal experience and dissections had proved to him was admitted as correct. At the same time he did not lay claim to any merit of originality, but merely to that which might accrue from his having forcibly directed the attention of the profession to the existence of these tumours. On consulting Bayle's posthumous treatise on cancer, he had found that Bayle admitted what he calls "fibrous degeneration" as common to all the tissues, and even devotes a chapter to fibrous tumours of the *mammæ*. He was, therefore, wrong in stating, as he did in his memoir, that Bayle merely recognized uterine fibrous bodies. Moreover, Bayle had known them become cartilaginous or osseous. Sir Astley Cooper had accurately described fibrous bodies of the *mammæ* under the name of chronic mammary tumour. He admitted that pathological formations, or types, were slightly different in different parts of the body, as was the case with animals or plants in different climates or soils; but the species was invariable and always to be recognized. As to the frequency of fibrous growths in this region, that was a question of observation, and could only be decided by observation. He persisted in looking upon them as very frequent in their occurrence. He thought that what M. Roux had said about the different forms of non-malignant tumours of the breast was very obscure, and did not show that surgeons were as far advanced as he appeared to think in their knowledge of diseases of the *mammæ*. Taking every thing that had been said into consideration, he did not see any reason for changing his opinions, and persisted in his assertions, viz., that the extirpation of fibrous tumours of the *mammæ* was not necessary, that it was to a certain extent facultative.

M. Amussat, M. Berard and M. Lisfranc successively addressed the academy, but as their speeches were merely repetitions of the arguments used by MM. Blandin and Roux, we shall not reproduce them. They all agreed that it was difficult, if not impossible, to recognize the real nature of the kind of tumour described by M. Cruveilhier, and thought that such tumours ought to be extirpated if the means of treatment which we possess failed to produce resolution.

57. *Extirpation of the Scapula and a part of the Clavicle.* By M. RIGAUD, Professor of Clinical Surgery in the Medical Faculty of Strasbourg.—A soldier, 51 years of age, had a tumour on the upper part of the left arm for which Professor Rigaud, in 1841, amputated the arm at the shoulder-joint. The wound resulting from the operation healed, and the patient continued in good health for eight months; when an osseous tumour was discovered in the axillary region, arising from the anterior angle of the scapula. M. Rigaud thought it necessary to remove the entire scapula with the external extremity of the clavicle, and this

was performed in the course of the year 1842, with entire success; the patient recovered in two months, and has since enjoyed excellent health.—*Comptes Rendus*, July 15, 1844.

OPHTHALMOLOGY.

58. *On partial Excision of the Opaque Cornea as a Cure for Blindness*.—M. MALGAIGNE, in the April number of *Le Journal de Chirurgie*, has published a long and learned paper on the subject here announced. It is preliminary to another, wherein he intends to embody the result of his recent experiments and observations; and he seems determined that, on the present occasion, nothing recorded in the history of the science should escape his reflection and criticism. Waiting the result of these original investigations, we shall supply a short analysis of all that appears important in the present communication.

The reading of M. M.'s short note in *L'Académie des Sciences* in March, 1843, was the means of his receiving various communications from several of his colleagues, more especially from MM. Blandin and Sichel. From the former of these gentlemen he learned that a couple of travelling oculists in France have, for fourteen years, been in the habit of performing this operation with varying success; putting forth no claims to invention, but affirming they only follow a practice which was successful before their days.

The author also refers to three memoirs which have since been published on the subject, by M. Rognetta, in *Les Annales de Thérapeutique*, by M. Desmarres in *Les Annales d'Oculistique*, and by Dr. Hamilton in the MONTHLY JOURNAL for March last; in the last two of which the practice, in certain circumstances, is advocated, whilst in the first it is unmercifully condemned.

M. M. ascribes the first notice of this operation, in medical records, to Saint Ives in the year 1722. This eminent man disapproved of the practice for the usual run of opacities of the cornea; but recommended it in those cases where the opacity was due to the sequela of a small-pox pustule.

Dr. Mead is the next author who alludes to the subject, in the few words so often quoted, viz., "he had only once or twice employed the partial excision with success."

There follows next the opinion of the German, Eschbach, in 1651. A regular practitioner himself, he had opportunities of becoming acquainted with the misdoings of some wandering and unprincipled quacks, who, on two occasions, had undertaken to perform much, and miserably failed. His judgment, then, was decidedly condemnatory.

In France, M. Demours held similar language in 1768, enforcing it by the details of a case in which the opaque cornea had been subjected to innumerable scarifications, which resulted in leaving the opacity worse than it had been before.

In 1779, Professor Gouan, of Montpellier, read to the Royal Society of that city, a case in which the result was the very reverse of the preceding. In 1777 a child aged seven was brought to him, which had lost its right eye when three months old, and when eighteen months, and labouring under small-pox, had been rendered quite blind by an opacity or cicatrice which covered the whole cornea of the left eye. For this the more common remedies—stimulants, irritants, &c., had been long used in vain; and the professor then advised partial excision. For the performance of this operation he engaged the services of M. Pellier, surgeon oculist to the king, who excised about $\frac{2}{3}$ of the thickness of the diseased membrane. The child showed no indications of pain; cold dressings were applied, and after six days he could distinguish such objects as the fingers, keys, &c. Dr. Gouan subsequently ordered the application of nut oil, under which the vision improved, and, after the lapse of two years, the cure was still considered perfect.

In 1789 M. Pellier gives the result of his more extended experience during

ten years, in these words. "Though I have described this operation for the cure of albugo and nephelium, yet uniform success is not to be expected. Experience has taught me its insufficiency in some cases, and its success in others."

Scarpa was very decidedly opposed to the operation, introduced, he alleges, by the ignorant, and commended by the charlatan. Wenzel was equally severe, remarking that it was likely to produce staphyloma.

In spite, however, of these authorities, Baron Larrey thought that the operation was sometimes worth a trial. In opacities of the cornea, says Larrey, of a certain degree of thickness, the membrane may be thinned down by repeated strokes of a slender bistoury. I performed the operation upon a young lady at Toulon, and thereby removed an old opacity which covered the whole extent of the cornea, and completely interrupted the entrance of the rays of light. The transparency continued in the part from which the opacity was removed, and the patient ever afterwards saw very fairly.

These are all the facts and testimonies, *pour et contre*, which the commendable zeal of M. M. has collected, and unquestionably they form a useful addition to our stock. Finally, the author concludes with Professor Rosas' two cases at Vienna in 1833-4, and with a minute account of Dr. Gulz's case in 1842.—*Lond. & Ed. Monthly Journ. Med. Sci.*, July, 1844.

59. *Spontaneous cure of Cataract.* By Dr. GIEHL.—A stone-breaker, who had suffered from cataract of the right eye from his youth, had the misfortune, whilst pursuing his occupation, to have his left eye struck by a splinter, which produced a violent concussion of the eye, and gave rise to inflammation and loss of vision. The man applied to Dr. G., who, on examining the eye, found, along with considerable inflammation, a completely formed cataract. He combated the former symptom by antiphlogistic remedies, and advised the patient, as soon as all irritation in the left eye should have disappeared, to have the cataract removed from the right one, in which the power of vision had been lost at an early period. On this the patient applied elsewhere for advice, and consulted Dr. S. in A.

In order to examine the eye more minutely, the latter dropped into it a solution of the extract of belladonna; in consequence of this the pupil dilated largely; at the same time, the opaque lens fell into the anterior chamber; and vision was immediately restored. The lens became absorbed by degrees, and the patient was cured.—*Lond. & Ed. Monthly Journ. Med. Sci.*, Aug. 1844, from *Allgemeine Zeitung für Chirurgie, &c.*, April, 1843.

60. *Death from Fright after the operation for Solution of Capsular Cataract.* By JONATHAN TOOGOOD, M.D.—J. G., aged 23, of a scrofulous and hysterical temperament, was admitted into the Bridgewater Eye Dispensary, February 16, 1839. She stated that she had always enjoyed good health to the age of sixteen, and had taken the charge of a dairy; that after this period the catamenia not appearing, she became subject to headache, had frequent attacks of hysteria, lost flesh, and was affected with a severe form of porrigio, which no medical treatment relieved. For the last five years the proper functions of the uterus had entirely ceased. About midsummer last she was suddenly seized with an acute pain in the left eye, accompanied with dimness, which, in a few hours, became so much worse that she was barely able to distinguish light. A fortnight ago the right eye became similarly affected, attended with the same sensations, and as speedily followed by complete loss of vision. On the 18th, the operation for solution was performed posterior to the iris, in both eyes, and the cataracts broken up. Nothing unusual occurred, but on the next morning she complained of pain in the right eye, extending over the temple and brow, and the iris appeared somewhat hazy. Leeches were ordered, a plaster of opium and belladonna to be applied over the brow, and five grains of hydrargyrum cum creta, with three of Dover's powder to be taken every four hours. The proposal to apply leeches excited the most extraordinary alarm in her mind; she exclaimed immediately—"Oh, I can never have leeches; I shall die if I have leeches." Her breathing became

very much hurried and laboured, her apprehension for her ultimate recovery so great, that every means of quieting her alarm failed; palpitation of the heart succeeded, with delirium and great prostration of strength, with violent perspiration, and, in spite of all treatment, she died at 1 A.M., the next day, breathing to the last in the same laborious manner.—*Prov. Med. & Surg. Journ.*, June 26, 1844.

61. *A case of partial Amaurosis cured by the aid of Urtication.* By M. POLTO.—A woman, 35 years of age, habitually healthy, had, in September, 1835, consequent upon her last confinement, an exfoliating exanthema covering the whole body. Being exposed to cold it completely disappeared: from that time there ensued general indisposition, derangement of the digestive organs, obscurity of vision and bronchitis. This state of things existed till the month of January, 1837. M. Polto having been called in, found the patient in bed, nearly blind, weak, and coughing continually; she could scarcely distinguish a ray of light; every thing appeared to her enveloped in a thick mist; the pupil was clear but immovable. M. Polto at once prescribed the use of hot diaphoretic drinks, afterwards dry friction, mustard poultices, blisters, and tartar emetic ointment. There was an improvement; the cough became less troublesome, the strength revived; the dryness in the skin, however, and the amaurosis still remained; many anti-amaurotic collyria were used without any success. The middle of June arrived, and M. Polto proposed submitting the patient to urtication and flagellation; he gathered some large fresh nettles, and having tied them up in bundles, he operated in the following manner:—The patient lying naked upon the bed, the operator commenced beating with the nettles, the feet, legs, thighs, buttocks, trunk, arms and neck; the head alone was spared. Immediately after she was made to lie down between two blankets, mustard poultices were applied to her feet, and hot drinks administered. She passed a most uncomfortable night, but in the morning the skin did not present any eruptive reaction. For five days the flagellation was repeated morning and evening. The skin bled in many places from the action of the nettles; she became, in consequence, dreadfully tender; and at last she was covered with a mixed eruption, partly erysipelatous, partly papular, partly purpurous, partly vesicular, partly phlegmonous, partly erythematous. Fever, conjunctivitis, cephalalgia and tinnitus aurium ensued; full pulse, urine scanty. Blood-letting, infusion of digitalis, and tartar emetic wine, were ordered. The symptoms abated, the eruption exfoliated, but the purpura remained for nine days; some of the papules suppurated. At the very moment of the cutaneous reaction, the sight began to improve; the patient distinguished persons when they approached her, and at last the functions of the eye became restored to a perfectly normal state.—*Prov. Med. & Surg. Journ.*, 26 June, 1844, from *Giornale delle Scienze Mediche di Torino*.

62. *Tetanus consequent on the treatment of Fistula Lachrymalis, by the insertion of Scarpa's style.*—A woman, 50 years of age, of lymphatic temperament, subject to rheumatism, was anxious to get rid of an epiphora, or involuntary flow of tears, which had troubled her for some considerable period. A surgeon consequently made an incision into the affected parts, and inserted Scarpa's pin [style]. During the operation the patient complained of pain, which extended itself from the artificial canal to the eye, the cheek, the forehead, and the angle of the jaw. Eight days passed, when, after a restless night, the patient perceived that she could not open her mouth. In the evening, M. Petri, who was called in, discovered a contraction of the temporal and masseter muscles, and general convulsive movements. He proposed to remove the lachrymal pin, but the ordinary medical attendant, thinking it was only rheumatic, would not consent. The patient was bled, and twenty leeches were applied to the neck. The following day the contraction had reached the neck and trunk; the arms next became affected, and, lastly, general convulsions supervened. The pin was removed and opium exhibited; but, notwithstanding a deceptive remission, the patient sank on the fourth day.

On examination, the lachrymal passages presented no extraordinary lesion. Permission was not obtained to examine any other part of the body.

A similar case was communicated to M. Petri by Dr. Betti, who witnessed its occurrence in the practice of Vacca. The tetanic symptoms immediately followed the introduction of the pin, but this celebrated surgeon suspecting the cause, removed the pin [style], and the trismus in a short time gave way.—*Prov. Med. & Surg. Journ.*, from *Gazette Toscana delle Sc. Med.*

63. *Intermittent Blindness*.—Mr. BRADSHAW related to the Reading Pathological Society the very interesting case of a French lady, aged 37, who was seized with fits of complete blindness. They came on suddenly without probable cause, night and day, irregularly, without periodicity, and each fit lasted about three hours. During the attack the pupils were widely dilated, there was complete blindness and perfect immobility of the eyes and their appendages. After the attack they resumed their wonted activity, and were apparently in a perfectly healthy condition. In other respects the lady was in the best possible health. This affection had continued for some years, and the fits recurred with about the same frequency, viz., three in a fortnight. She had submitted to a variety of treatment without benefit. Her sister was affected in a similar manner.—*Prov. Med. & Surg. Journ.*, 24 July, 1844.

64. *Spasm of the Orbicularis Palpebrarum*.—Mr. MAY mentioned to the Reading Pathological Society the case of a lady, aged 34, who had been affected for seven years with almost continual spasm of the orbicularis palpebrarum, and the muscles allied in the production of frowning.—*Ibid.*

65. *Artificial Pupil made in the Superior Eyelid*.—In a case of contraction of the orbicular muscle of the eyelid, which had resisted every remedy, even the twice-repeated section of the muscular fibres, M. GEROLD resorted to the following operation, which he has been the first to propose and to execute. After introducing a small, flat piece of wood, well oiled, underneath the superior eyelid, exactly opposite the pupil of the eye, he made a crucial incision, which completely divided the skin, the muscle and the mucous membrane. The external skin was then dissected off the four flaps thus formed, and the mucous surface was turned outwards and fastened to the base of the flaps, so that the mucous membrane formed the circumference of the artificial opening. No accident supervened, and vision was restored; the patient wore spectacles as a precautionary measure.

Such intractable cases as the above are of very rare occurrence; still the operation of M. Gerold, which is a most ingenious one, is a valuable addition to science. It may likewise be resorted to in cases of partial or complete paralysis of the third pair, with prolapsus of the superior palpebra. The longitudinal section of the eyelid, which has been proposed in such cases, is evidently a much more objectionable operation; it interferes more with the contraction of the orbicular muscles, exposes a greater extent of the eye to the external atmosphere, and consequently renders the inflammation, which usually follows such exposure, as in paralysis of the seventh pair, much more probable.—*Lancet*, March 23, from *Annales Belges d'Oculistique*.

66. *Ligature of the Eyelids*.—In chronic inflammation of the eyes, with relaxation of the superior eyelid, ulceration of the cornea and incipient pannus, the success of this slight operation is often surprising. Often the day after it has been performed, the ulcerations are favourably modified, and the vascularity of the cornea and conjunctiva has disappeared. The same remark may be made with reference to other forms of chronic inflammation of the cornea, to blepharoplegia and blepharoptosis. This remedy alone is frequently sufficient to effect a cure. M. AMMON thus describes the operation:—A transversal fold is made in the upper eyelid, and the base of this fold is pierced, by means of a curved needle, with two threads of cotton. The extremities of this kind of seton are

then fixed on the forehead by means of a piece of diachylon, the eyelid being sufficiently raised not to touch the globe of the eye. This *suspension* of the eyelid has a double influence. It acts as a derivative or seton on the one hand, and, on the other, preserves the eye from the contact of the inner surface of the eyelid, which is often granular, and occasions and keeps up the inflammation. There is only one objection [a very weighty one we think] to this operation, it may give rise to erysipelas of the eyelids.—*Ibid.*

67. *Cyanuret of Potassium for removing the stain of the Conjunctiva caused by Nitrate of Silver.*—It is well known that nitrate of silver, when long used, has the effect of turning the conjunctiva of a dark olive colour and greatly disfiguring the patient. M. Guthrie, in a late clinical lecture, stated that a solution of the cyanuret of potassium (three to six grains to the ounce of distilled water) applied by drops every other day, is an admirable remedy for removing this olive colour. Mr. Brock is said to have first proposed this remedy; which is also equally effective in removing the stain made by iodine on the skin.

68. *Acute Retinitis caused by the use of the Microscope.*—Mr. W. W. COOPER communicated to the Royal Medico-Chirurgical Society, (June 18, 1844,) a case of acute retinitis caused by the use of the microscope. The patient was engaged in dissecting the nerves of the human tongue under a powerful microscope; the nerves, having been cleanly dissected, were of a dazzling white, and whilst he was intently regarding them through the microscope, the sun, which had previously been obscured, suddenly shone forth with all its brilliancy upon them. Acute pain was instantly felt in the eye, pervading the whole globe. In about twenty minutes the pain subsided, though all uneasiness did not cease until evening.

The following day, the eye not being painful, the patient incautiously used it to complete his dissection, when the same occurrence took place as on the preceding day. This was followed by great and deep-seated pain, pervading the whole globe, with much intolerance of light, &c. Under the use of leeches to the eye, followed by frictions with mercurial ointment and opium, mercury and cicuta and other appropriate remedies, entire recovery took place.—*London Med. Gaz.*, July, 1844.

69. *Foreign body four years in the Eye.*—The following remarkable case of a foreign body, of considerable size, remaining for nearly four years in the interior of the eye, is related by M. CASTELNAU, and published in a recent number of the "*Archives Générales de Médecine.*"—

On the 29th of June, 1838, M. B., ætat. 30, foreman of the workshop of the Versailles railroad, a man of strong, robust constitution was wounded in the right eye. The accident occurred in the following manner:—M. B. was assisting a workman to introduce into some wood-work a steel wedge, which he was striking with a hammer of ten pounds weight, fixed at the extremity of a handle three feet long, when he suddenly felt a violent shock in the eye. A flood of tears passed from the eye, which was also the seat of a certain degree of pain, and sight was instantly destroyed. The patient remained some time sitting in the workshop, under the impression that these symptoms would soon disappear, as had frequently been the case before, under similar circumstances; but finding that they did not mitigate, as he had expected, after waiting some time, he returned home, and having thrown himself on his bed, slept quietly several hours. On awaking, he found that his sight had not returned, and that the pain still persisted; he, therefore, came to Paris, and consulted M. Sichel. This surgeon told him that the cornea was perforated; that the sight of the wounded eye was irretrievably lost; that it would be necessary to act energetically, in order to prevent the development of inflammatory symptoms; and that once that danger passed, there would be nothing to fear, as no foreign substance had remained in the eye. Thirty leeches were, therefore, applied behind the ears; frictions were resorted to, with an ointment of the nature of which the patient is ignorant; cold

was applied for some time to the head, by means of cloths soaked in cold water; and several mustard foot-baths were taken.

The inflammation which followed was not intense, but the pain persisted, and was accompanied by the continued oozing of an aqueous fluid, which soon produced excoriation on the cheeks. The wound of the cornea did not cicatrize. The treatment above mentioned was continued, with slight alterations, for nearly a month; at that epoch the patient consulted M. Carron du Villards, who merely confirmed the statement of M. Sichel. Soon after the wound of the cornea cicatrized. From that time the pain and oozing of fluid from the eye gradually diminished, and the patient was soon able to resume his labours. At first he could still distinguish day from night, but the sensation of light became, by degrees, more and more indistinct, until, at last, he lost it entirely, about eighteen months after the accident.

Two years had passed without any new accident, without even any pain manifesting itself. During that time the health of M. B. had remained constantly good, when one night he was seized with such intense pains in the head, more especially in the right eye and on the right side, that he uttered loud screams, and thought his reason would give way. A host of remedies were resorted to, leeches, opiates, cold applications, &c., during a day and a night, without producing any alleviation. On the second day the pain diminished a little, but it was not until the third that he was able to obtain any rest. On the fourth day all had disappeared, and for eighteen months he had no return of the cephalalgia.

At the end of February, 1842, three years and a half after the accident, I was called to see M. B. for the first time. He stated to me that for several days he had suffered pains in the right eye, which, at first dull and irregular, had become sufficiently violent to prevent his sleeping. The conjunctiva was rather red, and the cornea presented in its centre a conoidal prominence which at once attracted my attention. On inquiring whether a foreign body might not have penetrated into the eye, M. B. gave me the details which I have just narrated. He also told me that, having endeavoured to discover what it was that struck him, he found, on one side of the wedge, the trace of a splinter; that this splinter could not be found, but that it was of too considerable a size for it to have been possible that it should have entered his eye, and remained there so long, unless it had separated into several fragments. The opacity of the cornea was such as to prevent any examination of the interior of the eye; the eye itself had rather shrunk, as if it had lost a part of its humours. From the time of the accident the patient, who was accustomed to sleep on the right side, had been unable to do so without suffering great pain in the eye. These data not having completely dissipated my doubts with respect to the presence of a foreign body in the eye, I merely prescribed cold applications, frictions with a belladonna ointment and mustard foot-baths. These measures gave no relief; the redness and pain increased, and in the course of a few days there appeared on the most elevated portion of the prominence of the cornea, a small solid angle, which its great hardness evidently showed to be a metallic substance. It was thus evident that all the accidents owed their origin to the presence of this foreign body, and I had to choose between waiting for the inflammatory process which existed, to expel it from the eye, or its extraction by a surgical operation. I thought it better to adopt the latter course, in order to put an end to the torture the patient was suffering, and therefore proposed it to him. At first he refused to submit to any operation, and I was consequently compelled merely to resort to palliative measures. A few days afterwards, however, on the 6th of March, 1842, he again called on me; he was suffering severely, not having slept for three days. The conjunctiva was swollen, and of an uniform red hue; the angle of the foreign body actually raised the upper eyelid, and had produced an ulceration on its internal surface. The metallic angle stood out about a line beyond the cornea, which held it encased like the setting of a gem; there was no suppuration of the cornea around it. The operation appeared likely to be much easier than on

the day when the foreign body was first perceived, owing to its being so much more evident; the patient himself was anxious that it should be performed.

A small incision, less than a line in length, was made on each side of the foreign body, in order to separate it from the adjoining tissues. Although the adhesions between the foreign body and these tissues were very close, yet, by passing the narrow blade of a bistoury between them, they were easily separated from one another; the surfaces of the metallic fragment were thus entirely denuded, and then came the most difficult period of the operation. Whenever the slightest traction was exercised on the foreign body, in order to bring it sufficiently forward to pass the bistoury behind it, the patient suffered excruciating pain, and yet it was impossible to separate the adhesions which its posterior surface had contracted with the adjacent tissues, without thus bringing it forward. In order to overcome this difficulty I exercised slight lateral pressure on the external angle, so as to make it act as a lever, and bring the posterior angle forward, and then, passing the extremity of a small pair of curved scissors behind, gradually excised the pedicle. The operation lasted five or six minutes; the latter part of it only was painful. When it was terminated the patient had a syncope, but of only two or three minutes' duration. He soon recovered, and was able to return home; I told him to keep cloths, soaked in cold water, continually applied to the eye, and to send for me if the pain increased, or if any febrile symptoms supervened. Instead of increasing, however, the pain diminished about an hour after the operation, and the patient slept a great part of the night. On the 7th he scarcely suffered at all, and on the 8th returned to his work, which he has never left since. The redness and swelling of the conjunctiva had diminished as rapidly as the pain. The cavity which resulted from the extraction of the foreign body has gradually filled, and there now merely exists a slight depression corresponding to the perforation of the cornea. The eye is shrunken; the cornea is of a marbled-gray colour; the sclerotica remains natural.

The foreign body was a fragment of iron, representing exactly a regular triangular prism, two nearly equal surfaces of which formed a right angle; its length was seven lines, the width of the surface opposed to the right angle one line and a half; the total weight was one drachm and fifteen grains.

Among the many curious cases which science possesses of the sojourn of foreign bodies in the economy, there is, perhaps, none which can be compared to the one I have just narrated. It is difficult to say what was the precise region of the eye occupied by the metallic fragment; it is, however, certain that it was partly situated in the vitreous humour, as the two chambers of the eye would not have been large enough to contain it. A very remarkable feature of the case is its expulsion, which partly took place without any suppuration whatever. When the operation was practised the edges of the aperture of the cornea through which the metallic angle protruded, appeared as if recently cut by a sharp instrument. There was not, either, the slightest suppuration after the operation. Were the acute pains experienced by the patient two years after the accident to be attributed to the presence of the foreign body, and if so, what occasioned them? The first question may be answered affirmatively, as he had never suffered similar pains previous to the introduction of the metallic fragment into the eye; but it is more difficult to answer the second. It is, however, probable that the foreign body, as it gradually advanced from the depth of the eye to the cornea, came in contact with one of the divisions of the ophthalmic branch, and that the pains experienced by the patient were the result of this contact. The correctness of this hypothesis is rendered still more probable from the circumstance that decubitus on the right side invariably gave rise to pain in the eye. Since the extraction of the foreign body decubitus on the right side has again become easy, and is now as habitual to the patient as before the accident. This case shows how difficult it is, in some cases, to make a correct diagnosis, and how inscrutable are sometimes the operations of nature.—*Lancet*, Feb. 24, 1844.

MIDWIFERY.

70. *Chloride of Iron in Uterine Hemorrhages*.—Prof. D'OUTREPONT has employed with much success the chloride of iron for arresting uterine hemorrhages, both during and subsequent to labour. He used a saturated solution of the salt in distilled water. Sponges and tampons are soaked in this solution, and, after first using an injection, containing an ounce of this fluid, he plugs the vagina with the tampon, prepared in the manner just mentioned.—*Gaz. Méd. de Paris*, 21 Oct., 1843, from *New Zeitschrift für die Geburtskunde*.

71. *Cephalamatoma of New-born Children*.—Prof. D'OUTREPONT, to show that cephalatomata are not produced by a mechanical cause, quotes four cases, three of abortion, and one where the mother died of apoplexy at the seventh month of utero-gestation, and the child was extracted by the Cæsarian section, in all which the infants had cephalatomatous tumours.—*Ibid*.

72. *Dropsy of the Uterus and Uterine Tympanitis*.—At the meeting of the Scientific Congress at Strasburgh, in 1842, MM. Stoltz and Nægele, asserted that uterine tympanitis, or uterine dropsy, cannot possibly occur. Dr. TESSIER, of Lyons, in an interesting article in the *Gazette Médicale de Paris*, Jan. 5, 1844, has shown that it is not only possible for these diseases to occur, but that they actually have occurred.

He relates a very well-marked case of uterine tympanitis under his own observation, and has collected others related by different authors. The subject of the case observed by himself was a woman 43 years of age, very nervous temperament, who entered the Hôtel-Dieu on the 4th May, 1840, to be treated for chronic metritis, complicated with hysteria.

The uterus began to enlarge after her admission, and her menstrual discharge not reappearing, the patient considered herself to be pregnant. Six months after the suppression of the menses, the uterus having risen almost to the umbilicus, the patient was suddenly seized with pains similar to those of labour, and a large quantity of fœtid gas was discharged by the vagina. As the gas was discharged, the size of the abdomen diminished, and in a few hours acquired its ordinary size. Three years have elapsed, and the patient has since been often similarly affected.

Cases of hydrometra are still more frequent and conclusive, and Dr. T. gives a summary of many examples of this affection.

73. *Case of Enteritis simulating Pregnancy and Labour at the full time*.—A very remarkable and interesting example of this is related by M. BARBIERI in the *Lond. & Ed. Monthly Journ. Med. Sci.*, March, 1844.

The subject of the case, Mrs. W., was 32 years of age, the mother of two living children, born at full time, and of one still-born at the eighth month; she had enjoyed good health for the last fifteen years. M. B. found her suffering severe and repeated uterine pains, such as occur at the end of the first stage of natural labour, and recurring, at an average, every five minutes; they commenced in the back, and stretched round the pelvis and down to the anterior part of the thighs. M. B. obtained the following history of the case:—

“The catamenia had been absent for nine months and two days; she quickened at the end of four months and a half; the motion of the fœtus had become progressively stronger every month; she had experienced morning sickness, vomiting, heart-burn, irresistible longings, aversion to wine and tea, dysuria, spots and epiphleides on the face and skin, frightful dreams, cramp and pain in the legs for the last fortnight, hemorrhoids, varicose veins, and anasarca of the legs for the last two months. All these, with the exception of anasarca, cramp, and the aversion to wine, had occurred in her three former pregnancies.”

The size of her abdomen was that of a woman at the full period of utero-gestation; was hard, and the uterine enlargement felt prominent and distinctly cir-

cumscribed; "the entire abdomen bore the most minute and firm pressure at any point, without her experiencing the least pain or inconvenience. Her breasts, naturally rather small, were distended with an abundant secretion of good rich-like milk, such as to render it necessary to apply breast-glasses, which were emptied every quarter of an hour. This secretion of milk had occurred for the last two months and a half, and had never taken place in any previous pregnancy. The silvery lines referred to by Dr. Montgomery were moderately visible. The areola around the nipple was strongly marked; the nipple was turgid and prominent; about fourteen of the glandular follicles immediately around the base of the nipple were sufficiently conspicuous to indicate a former pregnancy, but by no means such as to justify the conclusion of its present existence." She, moreover, stated that the liquor amnii had been discharged about half an hour before M. B.'s arrival, and that she had a slight sanguineous discharge for the last three days, which caused her some anxiety, as it had rather an offensive odour. The nausea and vomiting had left her for the last three months; her pulse was 130, full, hard and incompressible; tongue clean and moist, and the bowels open.

Notwithstanding the above formidable array of the signs of pregnancy, Mr. B. felt dissatisfied at the absence of the glandular follicles at the base of the nipple, having always found them very prominent in all her former pregnancies; besides, M. B.'s educated ear was not reconciled to her present pains. He therefore hinted his doubts, at which she was very indignant, referring him, "*first*, To all the signs individually, laying great weight on the absence of the catamenia for nine months, stating that the menstrual secretion had previously always been healthy, as to time, quantity and quality; *second*, To the size and hardness of her abdomen; *third*, To the quantity of her milk; *fourth*, To the quickening and motion for the past four months and a half; *fifth*, To her previous experience of pregnancy; and, *sixth*, To the impossibility of her reckoning being wrong, owing to the absence of her husband during the entire period." M. B. was now obliged to leave the patient for two hours, and, on his return, he found her labouring under such powerful expulsive pains as nearly led him to alter his opinion of the case. An examination was now made per vaginam.

"The external parts were greatly relaxed, and the vagina so much dilated as easily to admit my closed hand, and from it a sanguineous discharge issued, whose odour and external characters could not be distinguished from those of the ordinary lochia, unless, perhaps, in being somewhat more offensive; but we all know that this smell, like that of sweat, is subject to considerable variety. The uterus was in an unimpregnated and healthy state, as regarded its body, cervix and orifice; the os uteri retained distinctly its transverse orifice, with well-defined and firm margins. I felt at a loss to account for the so-called discharge of the liquor amnii already referred to. It could not proceed from hydatids, cauliflower discharge, nor those splashes of urine which sometimes come away from pregnant women, as noticed by C. M. Clarke, owing to the state of the uterus. The catheter was therefore introduced, and upwards of two pints of high-coloured, transparent urine drawn off, divided into two portions, and reserved for analysis.

"As the bowels had been opened by castor-oil a few hours before my arrival, I proceeded to examine the abdomen under the chemise. In addition to what has already been stated, I found a pale-brownish stripe, nearly an eighth of an inch in breadth, in the mesial line, running from the umbilicus to the ensiform cartilage, but which certainly did not correspond to the description or opinion given of it by Mr. Turner."

Percussion was tried, but M. B. having no particular experience in it, places no dependence in the result. He did not auscult the abdomen. On examining the dorsal region, M. B. found that firm pressure could not be endured without her wincing at every attempt. Perplexing as the case was, M. B. now arrived at the conclusion, "either that it was inflammation and great enlargement of the kidneys, or inflammation of the posterior aspect of the intestines; but how could the immense indurated abdominal tumour be accounted for, more especially as the bowels were represented always to have been open?"

The pulse being strong and frequent, 64 ounces of blood were abstracted from a large orifice in the erect posture without inducing the least approach to syncope; but with great and immediate effects on the pain and expulsive action. "In about ten minutes, a state of the most profound syncope and collapse followed, which continued nearly a quarter of an hour, accompanied by an incredible discharge of liquid feces, amounting to at least four large chamber urinals, with an immense quantity of flatus, more noisy than offensive. Alarming as the case now was, I determined in trusting to her age and former constitutional powers. On recovering from this state, three grains of opium, and eight of calomel, were administered to prevent reaction. On examining the abdomen, the enlargement and induration had disappeared; and all the vertebræ could be easily touched through the parietes of the abdomen. She was now necessarily left for eight hours, owing to an obstetric engagement. At my second visit, I found she had enjoyed six hours comfortable sleep and freedom from pain; that the pain had returned during the last two hours, but was, for the first time, confined to the abdomen, where the slightest pressure could not be endured, while the back was free from it. The blood was now examined, and found to have a buffy coat of more than two lines in thickness, greatly cupped, firm and elastic; the coagulum was very dense, and floating in a small quantity of serum. One portion of her urine was then submitted to the action of heat at the temperature of 170°, and coagulated rapidly, showing distinctly the presence of a large quantity of albumen. The case appearing one of enteritis, complicated, perhaps, with Bright's disease of the kidney, she was immediately bled to the extent of thirty-two ounces, in the erect posture, but without producing any of the former results. This was followed up by the application of forty leeches to the ileo-cæcal region, and the hip-bath when they fell off; a blister was applied over the entire abdomen, to be dressed night and morning with the *ungt. hydr. fort.*; and it was resolved to give her two grains of calomel, with a fourth of a grain of opium, every four hours. On the third day the inflammation seemed to have been subdued. On the fourth I had acute gastritis to contend with, and that alone; and notwithstanding the most energetic local treatment, and the immediate suspension of the calomel, she experienced no relief, except from the unceasing use of small portions of ice, from which, while the supply continued, she remained free from the burning pain and other uneasiness. This, however, failed on the 21st; and, after enduring several hours' suffering, she died on the 22d day of the acute attack.

Morbid appearances.—On the abdomen being opened, there was found increased vascularity and thickening of the peritoneum; effusion of coagulable lymph, in the form of flocculi, with about four ounces of pus into the peritoneal cavity. The stomach presented great vascularity; two patches, the size of a half-crown piece, of softening of its coats, near the pylorus; and nearly the whole of the small curvature was more or less deeply ulcerated. Great vascularity of the duodenum, ileum and rectum; a few very small patches of softening were seen on the coats of the colon; a number of circumscribed superficial follicular ulcerations, with one small perforating ulcer, were found in the last twelve inches of the ileum.

The kidneys were in every respect healthy, as also the uterus and all the other abdominal viscera.

74. *Pregnancy—error in Diagnosis.*—Dr. COWAN related to the Reading Pathological Society the case of a woman in the hospital who had not menstruated for the last seven months. She had been previously healthy, had menstruated regularly, and borne two children. Seven months before, she had a discharge of fluid from the rectum, resembling the menstrual, and which continued to recur at regular monthly periods. There was no discharge from the vagina. A tumour was discovered at the lower part of the abdomen, which he concluded to be ovarian. This tumour was first noticed about two months after the first discharge from the rectum. The disease of the ovary he thought sufficient to account for the vicarious position of the seat of the discharge. She had no

suspicion of pregnancy. In a short time she was dismissed the hospital with a recommendation to her medical attendant that paracentesis might be performed when it became necessary.

Dr. Cowan, at a subsequent meeting, candidly acknowledged that his diagnosis in this case was incorrect; that she had been delivered of a healthy child, and that all trace of tumour had disappeared. The importance of this case in a practical point of view cannot be overrated. If one, who can bring to his aid all the accomplishments of general and physical diagnosis, commits such an error, or rather I would say, such an oversight, how cautious should another be who may be less able and less accomplished.—*Harrison's Retrospective Address*, in *Prov. Med. and Surg. Journ.*, July 24, 1844.

75. *Abortion*.—In fifty cases of abortion, of which Dr. ROBERT LEE has preserved the histories, uterine hemorrhage took place, he says, in twenty-six. "In forty-six, the detachment of the ovum from the uterus was the consequence of disease in the embryo or its envelopes. In four cases only out of the fifty, could the accident be attributed to an external cause, nor could any change of structure in the ovum be detected. The morbid appearances most frequently noticed in these ova were the following: thickening of the uterine and placental decidua, hypertrophy or atrophy of the placenta, deposits of coagula of blood in the cells of the placenta and of the chorion, the decidua reflexa hard, yellow and nearly impervious, having the canals partially obliterated which pass between the cells of the chorion and decidual cavity. Cysts of the placenta and villi of the chorion, the vesicula umbilicalis shrunk and hard, fluid between the amnion and chorion, an excessive quantity of liquor amnii, the umbilical cord unusually short or long, and firmly twisted, the embryo totally absent or very imperfectly developed, or malformed. Induration and thickening of the decidua, and the formation of clots in the cells of the placenta and of the chorion, were present in a great proportion of these ova, and to these causes the death of the embryo and the premature expulsion of the ovum, were chiefly to be attributed. In some of these cases the entire ovum was expelled with little pain and discharge, and by the uterine contractions alone. In others, the embryo escaped, leaving all the membranes adhering to the uterus, or the embryo was expelled enveloped in the amnion and chorion, and the decidua left behind for days, or even weeks. Not unfrequently the uterine decidua was torn off all round from the placental decidua, and left adhering to the uterus, while the remaining parts of the ovum, covered by the decidua reflexa, escaped.

"In all cases of threatened abortion, the condition of the os and cervix uteri should be ascertained accurately by an external examination; and if the orifice is open, and the neck shortened, and the ovum felt pressing into it, no good can result from attempting to prevent the expulsion of the ovum by anodynes. It is better merely to moderate the discharge, and leave the case to nature. If the os uteri is widely dilated, and the ovum has nearly escaped, it may at once be removed by the fore and middle fingers of the right hand. But this should not be attempted, unless there is the greatest probability of extracting the ovum entire. Where the ovum remains entirely within the uterus, and there is a profuse discharge of blood, one of the most effectual means of checking this is to pass a large, soft, dry sponge covered with lard into the vagina, which can easily be done in all cases, and firmly pressed up against the os uteri. This does not interfere with the application of cold to the hypogastrium and external parts, nor with the internal exhibition of acids, lead, ergot, or whatever else may be thought requisite; and the sponge in the vagina not only checks the hemorrhage, but it has an influence in exciting the contractions of the uterus, and closing the vessels from which the blood is flowing.

"I have recently been informed that premature labour may be induced by the same means, without forcing the sponge into the os uteri. I have had no opportunity of trying this method, but if it should always be successful in bringing on labour, there can be little doubt that it will possess great advantages over all the

other means which have hitherto been employed for this purpose, and which have been described in the third Report.—*Clinical Midwifery*.

76. *Arm Presentations*.—Dr. ROBERT LEE records, in his *Clinical Midwifery*, the histories of sixty cases of arm presentation. In a large proportion of these, the operation of turning was undertaken in the most unfavourable circumstances, both for the mothers and their children, after the liquor amnii had entirely escaped, and the uterus had not only been contracting for many hours around the child, but repeated unsuccessful efforts had been made to deliver. Seven women died from rupture of the uterus, and three from inflammation of the uterus. Laceration and inflammation of the uterus are, therefore, the consequences to be dreaded after turning. Four of these cases of rupture occurred in the practice of other accoucheurs, and three in patients under his own care, and where no great difficulty was experienced, or force employed in turning. The most perplexing cases were those in which there was distortion of the pelvis with arm presentation, and the most easy and successful those twin cases in which the superior extremity of the second child presented, and the operation of turning was promptly performed.

77. *Puerperal Convulsions*.—Dr. ROBERT LEE, in his *Clinical Midwifery*, has recorded the histories of forty-six cases of puerperal convulsions, of which fourteen proved fatal; five were delivered with the forceps; eleven by the operation of craniotomy, and two by turning. Thirty occurred in the first pregnancy or labour, and in twenty-one the insensibility and convulsions took place before parturition had commenced. A great proportion of the children were still-born, though expelled by the natural efforts. The brain was examined in six of the fatal cases, and in four various morbid appearances were observed in its structure: in the other two nothing unusual was visible. The fits were preceded in some cases by flushing of the countenance, headache, giddiness, drowsiness, depression of spirits, and partial loss of consciousness and memory; in other cases no premonitory symptom was observed. Several of the most severe cases occurred in weak, delicate women who had suffered in early life from hysteria or epilepsy, or had been exposed to great mental anxiety and distress during their pregnancy. In two of the fatal cases, and one which ended favourably, the disease speedily followed the use of stimulants and indigestible food. The fits immediately ceased, or became far less frequent and violent, in eighteen of the women after delivery; in others it had no effect in arresting the progress of the disease. Copious blood-letting was had recourse to in the greater number of cases here recorded, fortunate and unfortunate; but in some nervous women who recovered, depletion was not carried to the extent usually considered requisite in this affection.

Dr. Merriman has seen forty-eight cases of puerperal convulsions, of which eleven ended fatally; Dr. Ramsbotham twenty-six, ten of which were fatal; Dr. Collins thirty, five fatal; Dr. Ingleby thirty-five, eleven fatal; Madame Lachapelle, sixty-one. I cannot tell how many of them recovered.

The whole history of the phenomena of puerperal convulsions leads to the conclusion that the disturbed state of the brain depends upon the peculiar condition of the nervous system of the gravid uterus in the latter months of pregnancy. The dissections which I have made of the unimpregnated uterus, and of the gravid uterus in the third, fourth, fifth, sixth, seventh and ninth months of pregnancy, and after delivery, demonstrate that it possesses a great system of ganglia and nerves, which enlarges with the coats, blood-vessels and absorbents of the organ during gestation, and which returns after parturition to its original condition before conception takes place. It is by the influence of these nerves that the uterus performs the varied functions of menstruation, conception and parturition, and it is solely by their means that the whole fabric of the nervous system sympathizes with the different morbid affections of the uterus. If these ganglia and nerves of the gravid uterus could not be demonstrated, its phy-

siology and pathology would be completely inexplicable, and the causes of puerperal convulsions wholly unknown.

78. *Singular Osseous Deposit within the Cranium of Pregnant Women.*—In our preceding Number, (p. 174,) we noticed the very remarkable researches of M. Ducrest, in reference to a bony production upon the surface of the cranium in women who have died in childbed, and we now learn from an article in the *Prov. Med. & Surg. Journ.*, from *Omodei's Annali di Medicina*, that ROKITANSKY, of Vienna, one of the most experienced anatomists of the day, has observed the same production. It had also been previously noticed whilst epidemic puerperal fever prevailed in Vienna in 1834.

In the midwifery hospital at Vienna, from 1827 to 1837, inspection took place of the bodies of 1465 women who died in childbed; and in 1221 of these victims of puerperal fever in all its various forms, there was found a recent thin osseous deposit upon the internal surface of the cranium, mostly of the parietal and frontal bones, nearly toward the basis. Rokitansky is persuaded that this new deposit of osseous matter within the cranium is not connected with puerperal fever, but occurs during utero-gestation, under particular circumstances not yet defined, for he has met with it in those pregnant women who have died suddenly from an accidental cause, before, during, or soon after delivery.

79. *Scirrhus of Uterus, complicated with Ovarian Dropsy.* By Mr. ELKINGTON.—Mrs. Low, aged 41, a strong, active woman, mother of one child, first felt unwell in January, 1843; she had dyspepsia and pain in her back, which were relieved by tonics, &c. In April she had an inflammatory attack, affecting, she says, the lower part of the belly, accompanied by fever, pain about the pubic region, constipation, and pain in making water. She was relieved by leeches and anti-phlogistic measures; she then went into the country and remained there for some weeks. She consulted me on her return in September. I learnt that whilst she was in the country she had swelling of the right leg, which, from her description, was probably phlegmasia dolens; obstinate constipation, pains about the pelvis, and a constant watery discharge from the rectum. She now complains of great difficulty in regulating her bowels, and cannot keep them open without aperients; she says when the motions are figured, they are very small, not thicker than the little finger. She has a frequent watery discharge from the rectum, which escapes generally when she lies down, and to the amount perhaps of a tablespoonful or two each time. Whilst she was in the country she states that she was obliged to get up in the night every ten or fifteen minutes to evacuate the bowels, and that nothing passed but a small quantity of clear water. On examination externally a small circumscribed tumour in the left iliac fossa, about the size of a small orange, immovable and semi-elastic, was detected. On examination per vaginam, I found a firm, inelastic tumour, occupying the greater part of the cavity of the pelvis; it was low down, hard and fixed, and seemed to consist of enlargement of the uterus. It appeared to occupy anteriorly more the left side of the pelvis, and the left side of the vagina was puckered, as if adhesions were formed. On examination per rectum, the tumour was found posteriorly larger on the right side, and encroaching very much on the cavity of the rectum, greatly interfering with the passage of the feces. She had very little discharge from the vagina, and that merely an increase of the natural secretion; there were slight tenderness and swelling of the lips of the os uteri. She had lost flesh, and was gradually getting thinner. She suffered from a sensation of weight and heaviness in the pelvis, but not much from pain. The most distressing feature of the case was obstinate constipation. The legs became œdematous; she gradually got thinner and weaker, became dropsical, increasing to a great size in the belly. She died Feb. 2, 1844. The treatment was palliative.

Post-mortem, Feb. 3d. We could only get permission to examine the abdomen. About two gallons of serum were drawn off from the cavity of the peritoneum. On opening the abdomen we found the peritoneum lining the parietes

covered with numerous small tumours, varying from the size of a pea to that of a large marble; the omentum was like a bunch of large grapes; the under surface of the liver was studded with them, and the small intestines had also a sprinkling of them. There were bands of lymph tying the intestines to the parietes: there was also lymph deposited on the liver and spleen. With some difficulty we removed the contents of the pelvis. On examination we found the uterus enlarged and very hard, having the true scirrhus character, the os patulous; the lips swollen, and upon the anterior lip three small ulcerations, the largest about the size of a split pea, and superficial. There is a scirrhus growth from each side of the body, commencing at the upper part of the cervix, and which terminates in a cyst the size of a walnut, filled with serum; the right Fallopian tube is enlarged, hardened, and firmly united with and forming part of the uterine tumour; the left Fallopian tube is united with the surrounding parts; posteriorly, the rectum is adhering to the lower part and middle of the uterus, from which it cannot be easily separated; behind the fundus there is a portion of the ileum adhering; on the fore part the bladder adhered firmly to the uterus throughout, and was with difficulty dissected from it; the left ovary is enlarged to the size of a small orange, forming a cyst filled with fluid; the right ovary has formed a cyst, which has ulcerated, and discharged its contents into the rectum. A probe may be passed from the cyst into the intestine.

It is surprising that she felt so little pain, her sufferings being caused chiefly by her size from the effusion. This case points out the necessity of carefully ascertaining the condition of the uterus in all cases of ovarian dropsy, before attempting any operation for the removal of the ovarian cyst. It clearly shows the co-existence of the one with the other. Which was the primary seat of disease, the uterus or the ovaries, it is difficult to say; but it is probable that the uterus was the first to take on disease, from the extent to which the whole of that organ was affected, and the extensive adhesions formed between it and the adjacent parts. It is probable the reason she suffered so little pain was in consequence of the ulcerative process having so recently commenced. If the ovarian cyst had grown more rapidly, and acquired a larger size before the uterus had become so decidedly diseased, and before the general health had suffered to such an extent, it is possible that an attempt might have been made to remove the cyst. It demonstrates the necessity of great caution and nice discrimination in such cases, as well as the risk and danger of an operation.—*Prov. Med. and Surg. Journ.*, May 15, 1844.

80. *Uterine Disease.*—*Mechanical Dilatation of the Cavity of the Os and Cervix of the Uterus, as a means of diagnosis and treatment, in some affections of that organ.*—Professor SIMPSON first showed the difficulty which exists in ascertaining some of the morbid conditions of the lining membrane of the cervix and cavity, in consequence of the small size of the normal opening into the organ. He pointed out that this opening may, by the use of a succession of *sponge-tents*, be enlarged to such a degree as to overcome, in a great measure, this difficulty. The kind of sponge-tent which Dr. S. has used is made in the manner of that described in most old works of general surgery. The pieces are pyramidal, of various sizes, and have a perforation in their base, to allow of their being temporarily fixed upon a curved wire or bougie, for their ready introduction into the os uteri. The bougie is withdrawn as soon as the sponge is lodged, and in a few hours the latter expands immensely in size. Previous to its introduction, a string is attached to the tent to allow of its easy withdrawal. Under the expanding power of the tent, the cavity of the os and cervix uteri may be dilated, and without any suffering to the patient, to such an extent as to allow the finger to pass a sufficient distance, for the purpose of ascertaining various points of diagnosis, which could not otherwise be arrived at. Dr. Simpson stated that he had employed the same means to facilitate some kinds of remedial and operative interference in this part of the body, such as the removal of those small vesicular polypi that are so frequently clustered upon the interior of the cervix.

In speaking of dilatation of the os and cervix uteri as a means of cure, Dr.

Simpson pointed out the results of this practice in the hands of the late Dr. Mackintosh in the cure of dysmenorrhœa and sterility, connected with normal and inflammatory strictures of the os uteri. His own results had not been so successful as those of Dr. Mackintosh; but he had now seen a considerable number of severe cases in which dysmenorrhœa that had previously resisted all other kinds of treatment, had at once yielded to the mechanical dilatation. Dr. Simpson had found the stricture occasionally at the os internum or opening between the cavities of the cervix and body, and not at the os tincæ. Dr. Mackintosh had effected the dilatation with long straight bougies of different sizes. Dr. Simpson had found them more easily used when slightly curved. He also showed other instruments, one of them like the dilater for the female urethra, which he had occasionally employed for this purpose. These instruments were all of them intended to be left in the os uteri for only a short period, and their introduction repeated from time to time, as in the usual treatment of stricture of the urethra in the male. Latterly Dr. Simpson had in his practice thrown aside these, and used another form of permanent bougie for this purpose, and he considered them to be greatly preferable. These permanent bougies were made of Berlin silver, the stem or part included in the uterine cavity was two inches and a quarter in length, the lower ends which rested in the vagina were bulbed and enlarged to the size of a large almond, and were perforated below for the purpose of being placed on a temporary handle, used in the introduction. One of the instruments was left in the uterine cavity for three or four days, and by that time the part was so much relaxed, that another of a much larger size could, in general, be easily introduced. They could easily be borne without the slightest inconvenience, and, indeed, without the patient being aware of their presence. Dr. Simpson pointed out that this permanent form of bougie altogether gave much less pain to the patient, and less trouble to the practitioner; was more certain and expeditious in its effects, and was especially useful when the surrounding tissues of the lips and cervix were in any degree indurated. Obstructed dysmenorrhœa sometimes depends on other circumstances than ordinary strictures of the os. It is sometimes seen in connection with the conical hypertrophy and elongation of the cervix. Dr. Simpson had found it in several instances accompanied with much morbid thickening of the anterior lip of the os uteri, the posterior lip being thin and healthy, and the os stretched out between them of an irregular crescentic shape. In such, and other instances, Dr. Simpson had divided the os uteri on each side to the extent of a few lines with a very narrow knife, or "*lithotome cachée*," and subsequently kept the part temporarily dilated with the sponge tent. He quoted cases of the perfect success of this simple and safe measure; it placed the parts in something of the same condition as that which they present subsequent to miscarriage; and this latter occurrence is known in general to leave without dysmenorrhœa those who have previously been labouring under that affection, whilst, at the same time, women after aborting, usually soon again become pregnant, there being no such great lacteal determinations to the mammæ, as occur after parturition at the full period, and which seem then usually to interfere with the early repetition of conception.

Lastly, Dr. Simpson offered some observations on the introduction of the sponge tent, into the os of the pregnant uterus, in certain conditions in connection with abortion, and as a means of inducing premature labour. When abortion was inevitable, and the hemorrhage great, a small expanding sponge tent passed into the os uteri, was more effectual than a large vaginal plug. It at the same time opened up the os uteri, so as to allow of the more easy escape of the contents, whilst uterine contractions were, in most instances, ultimately induced by its presence. For the same reasons it was often a valuable means of both opening up the os uteri and exciting the necessary degree of uterine action in those occasionally perplexing cases where, in abortion, the embryo escapes, but the secundines are long retained. Dr. S. had employed the same simple means in inducing premature labour, and spoke of the advantages of it in comparison with the various other measures that had been proposed for that object. He found that the tent, when made and introduced in the mode already stated,

required no vaginal plug or other means to hold it *in situ*. By its use the first stage of labour, or the dilatation of the os uteri, could, in a great degree, be advanced before the labour itself actually began.—*Lond. and Edin. Month. Journ. Med. Sci.*, Aug., 1844.

81. *Scirrhus of the Uterus*.—Dr. SCOTT read to the *Medico-Chirurg. Society of Edinburgh*, May 1st, a case of scirrhus of the uterus, in which none of the usual signs of that disease had appeared, but which, two years previous to death, presented all the symptoms of spinal neuralgia, constant cough, without any indication of disease of the lungs, vomiting of food, exquisite pain, almost to fainting on pressure of the spine, and progressive emaciation.

The disease terminated fatally from slight uterine hemorrhage. On examination, the lungs and stomach were found healthy; the uterus was scirrhus and enlarged, but without ulceration. Dr. Scott considered it, in connection with the papers he had formerly communicated to the society, as throwing great light on the subject of spinal neuralgia in general.—*Ibid*.

82. *Tumours on the Fœtal surface of the Placenta*.—M. DANYAN gives two cases of this rare pathological occurrence. His patients were delivered without any difficulty. On the fœtal surface of the placenta, underneath the chorion and the amnios membranes, he found a tumour in one instance 20 centimetres, (eight inches,) in the other 13 centimetres (five inches) in length. The tumours, in both cases, rested on the fœtal surface of the placenta, to which they adhered by vascular ramifications, and by very slight adhesions. The tumours were nourished by vessels proceeding from the umbilical cord itself, and from the vascular network of the placenta. Their tissue was firm, homogeneous, like scirrhus tissue, and grated underneath the scalpel. M. Danyan thinks that these productions were the result of organized sanguineous coagula.—*Lancet*, July 6th, 1834, from *Journal de Chirurgie*.

83. *Pelvic Inflammation, with Abscess, occurring after delivery*. By JOHN C. W. LEVER, (*Guy's Hospital Reports*, April, 1844.) In this very interesting paper, Dr. L. relates nine cases of pelvic inflammation, with abscess, occurring after delivery, and presents some remarks on the disease, deduced from a comparison of those cases.

"1. *Seat and origin of the disease*.—It is difficult to decide whether the disease commenced in the uterine appendages, strictly so called, or whether the cellular structure was primarily affected; but that the cellular is involved, Dr. Lever thinks is very clearly shown.

"2. *Causes*.—This disease may follow an attack of acute inflammation; or it may remain as the sequent of puerperal fever. In the greater number of the previous cases, anomalous symptoms displayed themselves soon after delivery. Cold, falls, blows, &c., are said to have produced the disease. In but two cases were the labours unnatural; in two cases the right side of the pelvis was affected; in five, the left; and in two, matter was evacuated from both sides: in one, the right preceding the left; in the other, the pus was evacuated from the left side externally, and from the right side, through the bowel.

"3. *Symptoms: General*.—The symptoms may commence a day or two after delivery, or they may supervene some days or even weeks after labour. The disease is mostly preceded by rigors, or a sensation of coldness over the surface, followed by heat of skin, quickened circulation, and pain in the region of the pelvis. The febrile paroxysms may remit, but their intervals of recurrence are at varying intervals. The uneasiness and pelvic pain continue, and, as the disease progresses, increase: usually there is some degree of stiffness in the side affected, and not unfrequently pain in the course of the vessels of the thigh and leg: this may proceed to the development of phlegmasia dolens. The pulse is seldom below 100—110: the tongue remains loaded: there are frequent calls to pass the urine, which is scanty and high-coloured: at one time there is con-

stipation of the bowels, at another diarrhœa associated with tenesmus; and the secretion of milk is usually scant, or altogether suppressed.

"These symptoms may continue for an indefinite period; when, if the disease be overlooked, or if the remedies employed do not succeed in checking its progress, they are followed by the attendant signs of suppuration, and the matter may be evacuated either by an artificial or natural opening.

"*Local.*—The patient usually directs the accoucheur to the seat of the affection: in some cases, a swelling is readily seen; in others, there is an appearance of fulness on one or both sides. This will be found very sensitive; and the patient will, with difficulty, be persuaded to allow a careful examination with the hand. When this is done, the whole of the iliac region, on the side affected, may be found of 'a brawny hardness;' sometimes prominent, but usually very tender to the touch. This hardness has, in some cases, been found to extend as high as the umbilicus, and as forward as the linea alba. In other cases, the tumour is seated more deeply in the pelvis; and is then not so readily defined, is less movable, and will bear superficial pressure: but if the hand be pressed deeply into the cavity of the pelvis, the patient will immediately shrink. If a vaginal examination be made, in some cases, nothing abnormal is detected; the canal may be cool; there may be no tumefaction; and the uterus may be moved without inducing great suffering: although, in by far the greater number of cases I have seen, there has been, to use Dr. Simpson's words, 'a morbid permanence of the state of puerperal hypertrophy;' and, as a general rule, it will be found that wherever pelvic inflammation occurs soon after delivery, a long period will elapse before the uterus returns to its original state. In other females, the upper part and side of the vagina will be found hard, tender, firm and inelastic; and, by pressing upon the swelling felt through the abdominal parietes with one hand, and keeping the forefinger of the other in the canal, we are able to satisfy ourselves that the hardness and swelling felt in both situations arise from one and the same cause. Frequently, there is some lateral displacement of the uterus. On examination per rectum, the swelling is, in some instances, found to encroach upon the bowels; and this will explain both the occurrence of tenesmus and hemorrhoids, as well as the occasional discharge of the contents of these abscesses per anum.

"4. *Diagnosis.*—(1.) *From inflammation and abscess of the abdominal walls.*—I have seen three cases of inflammation, followed by suppuration taking place in the parietes of the abdomen, after delivery; this has occurred from a giving way of some of the muscular fibres, or tendinous expansion, during violent efforts. The patients were sensible of the injury, and at the time of its occurrence made great complaint. On the other hand, I have seen abscess of the abdominal parietes occur without any such assignable cause; and it will be well, therefore, to mark the diagnosis between simple abscess of the abdominal walls and those collections of matter which issue from the pelvis behind, and external to the peritoneum, presenting themselves in either iliac region. In the early stage of the latter, the skin, as well as the muscular parietes, may be readily rolled over the tumour; evidently demonstrating their non-connection: while, if the abscess be seated in the abdominal walls, by moving the one we move the other. This method of diagnosis is most satisfactorily applied when the patient is in a prone position.

"(2.) *A morbid permanence of the state of puerperal hypertrophy of the uterus* may be mistaken for pelvic abscess. I have already alluded to the enlarged condition of the uterus which usually persists in women who have suffered from pelvic inflammation; and I have observed the same circumstance in females who have recovered from puerperal fever. Such swellings are not always confined to the central line, but may extend into either iliac region, and they may be associated with inflammatory effusions into the pelvis. In the diagnosis of such cases, valuable assistance will be derived from the employment of Professor Simpson's uterine bougie: by its aid the situation and size of the uterus may be determined, its mobility or fixity ascertained, and the locality of the inflammatory effusion decided.

“(3.) *Feculent collections*.—In puerperal women we sometimes meet with tumours in either iliac fossa: on the one side arising from a collection of feces in the cæcum; and on the other, from a similar collection in the sigmoid flexure of the colon: and such collections, by an inexperienced and careless observer, might be mistaken for inflammatory swellings. The early period at which they occur after delivery; the tympanitic condition of the abdomen; the frequent expulsions of flatus, both by mouth and anus; the frequent colicky pains; the occasional vomiting; the loaded tongue; the state of the pulse; will enable us to frame a correct diagnosis. And further, upon inquiry, we shall find that for some time the patient's bowels have been in a constipated state; while the exhibition of purgatives, and the administration of cathartic glysters, by their effects will remove all doubt from the case.

“(4.) *Typhlo-enteritis*.—I need scarcely dwell upon the means of diagnosing pelvic abscess from inflammation of the cæcum, and the cellular membrane external to it. Here the symptoms of intestinal disturbance will be found at the commencement; the constitutional symptoms are more active, and soon become typhoid. The tumour itself also gives to the hand of the examiner a different sensation from that felt in pelvic inflammatory effusions; in the former, also, a “*craquement*” is frequently detected. Still, it must be admitted, that cases are recorded in which the cæcum and its cellular bed have become secondarily affected.

“(5.) *From abscess behind the flexors of the hip*.—Inflammation and suppuration are occasionally met with behind the psoas and iliacus muscles, and might, by an inattentive observer, be mistaken for the disease under consideration. In the former, however, the pain is more acute, and is increased by the slightest motion of the hip-joint: there is pain also in the knee: the patient lies with her thigh and leg flexed; she cannot allow the limb to hang down; neither can she bear the slightest weight on the foot of the side affected.

“(6.) *From sciatica*.—Dr. Churchill states he has known this affection mistaken for sciatica; but surely, if a careful internal and external examination be made, such an error cannot occur.”

5. *Termination*.—This, Dr. Lever remarks, is by *resolution*, but most frequently *suppuration*. 1, The abscesses evacuate themselves, externally; 2, into the cavity of the peritoneum; 3, into the vagina; 4, into the uterus; 5, into the bladder; 6, into the intestinal tube, and 7, into the surrounding cellular tissue.

“6. The *sequelæ* of the disease are: 1. *Immobility of the uterus*. The uterus is bound down, and rendered incapable of expansion; so that if gestation occur, the ovum is prematurely cast off, and in this way may give rise to a succession of abortions. During gestation, brief though it be, the patient suffers much from pain in the region of the uterus, and the abortion is attended with an unusual degree of suffering. 2. An impervious condition of the Fallopian tube. If this exists only on one side, the generative faculty will not be interfered with. 3. *Ovarian disease*. According to Dr. L.'s experience, this is a very uncommon result.

“7. *Treatment*.—In the treatment of this latent affection, our first object,” says Dr. L., “should be to procure resolution: for this purpose, heroic measures are not required, as the disease is usually found in patients whose constitutional powers are much depressed, and demand mild and cautious treatment. General blood-letting has not been required in any case that has fallen under my notice; whilst, in most, the abstraction of blood by leeches, repeated, if necessary, two or three times, has been attended with marked advantage: in my opinion, it is better to repeat the application of leeches than to apply a large number at one time. They may be applied either to the seat of pain and swelling, or to the vagina by means of the speculum; whilst the flow of blood may be encouraged by the constant application of warm cataplasms, or the injection of the dec. conii, anthemidis, or papaveris: while blood is thus drawn from the part affected, the milder mercurial preparations should be exhibited in small but repeated doses, but just sufficient to affect the system. Two or three grains of blue pill, combined with the extract of conium, or the hyd. c. creta, with Dover's powder, may

be given each night at bedtime, or night and morning; but the effects of this medicine must be closely watched, for its exhibition must be discontinued so soon as the red line is seen along the margin of the gums. While pursuing this plan of treatment, the secretions should be attended to; the kidneys must be kept in action; the bowels free; and at the commencement of the disease, diaphoresis may be promoted.

"From the record of the cases it will be seen that the patients frequently suffer from distressing tenesmus: this may be remedied by the use of the enema amyli, to which some syrup of poppies or tincture of opium has been added; or by the introduction of an opiate suppository.

"In some cases, notwithstanding the early employment of legitimate means to effect resolution, and in others, from the first moment of our being called in, the symptoms plainly indicate the formation of pus. And here our object should be twofold: 1. The promotion of suppuration and evacuation of the matter; and 2dly. The maintenance of the constitutional powers.

"1. The first object will be accelerated by the continued application of medicated poultices and fomentations, which soothe the pain and lessen the patient's sufferings. When the symptoms plainly indicate the formation of matter, and fluctuation is evident, the abscess should be opened: this may be done externally, through the abdominal parietes; internally, through the vagina, by means of the speculum and a guarded lancet; or through the rectum by means of a trocar, as in Dr. Simpson's case.

"M. Martin recommends the application of caustic potass to the abdominal parietes, for the double purpose of having an external opening, and securing previous adhesion of the containing sac to the abdominal walls. This method of practice appears to have been very successful in his hands; but still there are cases to which its inapplicability must be obvious.*

"In some of the cases related, the patient's sufferings would have been diminished had an earlier opening been made.

"2. The constitutional powers must be maintained by a generous, nutritious diet, porter, wine, &c.; the administration of tonics and sedatives.

"Where inflammation takes place in the course of the veins and absorbents, leeching along the line of the inflamed vessels, followed by hot spirit fomentations, will be found of service; taking care, at the same time, to allay pain and irritation by sedatives, and to support the system by mild tonics.

"In some cases, where the inflammation does not proceed so far as suppuration, and in others, where pus has formed and has been evacuated, there will remain considerable induration of the affected structures. Its absorption will be promoted by the exhibition of the pot. iodid. two or three times a day, in the dec. sarzæ c., or the dec. cinchonæ, and by the application of blisters.

"The continuance of nursing is by no means an unimportant question in the treatment. In the majority of cases, the secretion of milk is scanty, and insufficient to satisfy the cravings of the child: If, therefore, we find the patient's strength decidedly deteriorated by nursing, we should at once forbid its continuance, and commit the infant to the care of a wet-nurse; but if, although the secretion be scanty, the patient's health does not appear to suffer, we may permit her to suckle her child."

We may refer, for some further information respecting this disease, to the interesting paper of Dr. Churchill, analyzed in our number for January last. (P. 226, *et seq.*)

* See Dr. Simpson's case, *Edin. Med. and Surg. Journal*, 1843, pp. 1013-14.

MEDICAL JURISPRUDENCE AND TOXICOLOGY.

84. *State of the Arteries and Veins after Death*.—The fact of the arteries being found empty after death, except under very peculiar circumstances, is a physiological or anatomical fact which has been known from the earliest times. It has also been long known that general capillary congestion is one of the first symptoms of decomposition after death. The skin becomes sugillated with red streaks, the conjunctiva is bloodshot and the mucous membrane livid. If the interior of the body is examined, the venous capillaries are everywhere found gorged with blood. The fluid contained in the serous cavities also become tinged with blood, and the larger veins are empty *as well as* the arteries. M. DEVERGIE, in his work on Legal Medicine, (vol. i, pp. 166, 214,) accounts, correctly we think, for these anatomical appearances, by the decomposition of the fluids, the gases developed in the blood-vessels propelling that fluid into the capillaries. M. Devergie's interpretation of the above phenomena is generally adopted by the French medico-legists.—*Lancet*, April 13, 1844. T. R. B.

85. *Poisoning by Lead Shot*.—(*Journal de Chimie*).—An individual after drinking a few small glasses of "liquor," was seized with violent colic and all the symptoms of poisoning. Dr. HARLE, who was immediately called in, on examining the remainder of the liquor still contained in the bottle, remarked that instead of being limpid, it was of a dirty hue. On pouring it into another vessel he found fixed at the bottom, ten lead shots, which had been gradually transformed into carbonate of lead, so that there only remained a very small nucleus of metallic lead in the centre of each. As long as the liquor remained clear, it had given rise to no accident. It was thus evidently the suspension of the salt of lead which had acted as the poison. T. R. B.

86. *Cryptogamic Vegetations on the Mucous Coat of the Stomach after death*.—Dr. LEE describes the appearances found in the stomach and upper part of the intestinal canal of a corpse which had been interred for three months, and then exhumed for medico-legal investigation. The mucous surface of the stomach was of a deep chocolate colour, and on it were scattered numerous white circular bodies, elevated at the edges and depressed at the centre; some of these were very minute and had the appearance of a white powder sprinkled on the membrane. This appearance has been noticed by Orfila, as one of those which had been mistaken for arsenic. Buchner, too, has mentioned a white, granular substance containing fat, which was found lining the stomach. The question arises, what is the intimate nature and origin of these bodies? Are they fungi? They are certainly not calcareous depositions. They are partially soluble in alcohol, and they melt before the blowpipe.—*Dublin Journal*. A correspondent in the *Provincial Journal* found similar appearances in a body which had been interred fifteen months. These particles, examined chemically, yielded the same results as adipocere, of which they probably consist.—*Lancet*, April 20, 1844. Certainly this last is the correct solution. Orfila examined these appearances, (found equally in the stomachs of those who had not been poisoned,) and ascertained that they consisted of fat and albumen. T. R. B.

87. *Cyanol*.—About ten years since, RUNGE published his researches on the organic bases contained in coal-gas naphtha, and stated that he had discovered no less than six different bodies in it, named *cyanol*, *leucol* and *pyrrol*, and *carbolic*, *rosolic* and *brunolic acids*. Dr. HOFFMAN, an assistant in the Giessen Laboratory, has recently examined several of the more interesting of these. Cyanol is described as a clear and limpid liquid, of an oily consistency, a slight, agreeable, vinous odour and an aromatic, burning taste. It is in a high degree volatile, evaporating at nearly all temperatures.

Runge mentions that he killed leeches by immersing them in a watery solution of cyanol. Hoffman injected ten grains mixed with three times as much

water into the throat of a rabbit. Violent spasms ensued, with difficult and slow breathing, and a complete prostration of strength. Twenty-four hours afterwards, the animal had not recovered its healthy condition, the breathing was still slow, and the mucous membrane of the mouth highly inflamed. The blood of the killed animal presented nothing remarkable.—*Lond. Edin. and Dub. Phil. Magazine*, February, 1844.

T. R. B.

88. *Arsenic Symptoms*.—"Arsenic provokes vomiting, though we never find stercoraceous matters ejected from the stomach under its influence. In fact its action is either confined to the stomach, and in this case the vomiting can consist only of chymous matter, or else it extends itself to the intestines and there produces diarrhœa and dysentery, instead of obstructing the passage of the fœcal matters and forcing it to pass upwards into the stomach. We know of but three cases in which stercoraceous vomiting takes place; a state of *volvulus* or *ileus*; a stoppage of the intestines by insoluble stercoraceous concretions, and lastly, occlusion by the adhesion and folds of large worms, such as the larger lumbrici. I have looked over nearly two hundred volumes of medical journals, with a view of collecting all the cases of poisoning by arsenic, but I have never met with a single one which contradicted these two general laws."—RASPAIL.—*Medical Times*, November 4, 1843.

T. R. B.

89. *Fusel Oil*.—"The influence which extraneous substances exercise upon the products of vinous fermentation is strikingly exemplified in the fermentation of potato-mash. It is well known that in the manufacture of potato-spirit, an oily liquid is obtained, besides the alcohol, possessing poisonous properties, a highly disagreeable smell, and nauseous taste; this is called *fusel oil*. It does not exist ready formed in the potato, but is a product of the transformation of sugar, for it is produced not only in the fermented potato-mash, but also in the fermentation of the last syrups obtained during the preparation of the beet-root sugar.

This fusel oil belongs, by its chemical properties, to the same class of bodies as alcohol; it is an alcohol from which the elements of water have been separated. Two atoms of fusel oil are formed by the aggregation of five atoms of alcohol, with separation of six atoms of water.

Fusel oil is produced in our spirit manufactories as an accidental and accessory product, in such large quantities that it is used for lighting the buildings.—*Liebig's Lectures, Organic Chemistry*, in the *Lancet*, May 18, 1844.

Some remarks on the same subject, but not so explicit, will be found in the author's *Agricultural Chemistry*. Has no other chemist noticed this product?

T. R. B.

90. *Caution in giving Albumen as an Antidote*.—"Practitioners, in employing albumen as an antidote to corrosive sublimate, should be aware that it may be given in too great quantity, as the compound formed is soluble in an excess of albumen, and in the deleterious combination which enters the blood, producing the remote influence of the poison. So long as the vomited matters contain a white opaque material admixed, the antidote should not be withheld; when the *ejecta*, on the contrary, become transparent, the further employment of the remedy is generally useless, and may be injurious.—*Dub. Med. Journ.* T. R. B.

91. *Gun-Shot Wounds*.—Lord Eldon, late in life, told this striking story of an assize scene to one of his daughters. "I have heard some very extraordinary cases of murder tried; I remember, in one where I was counsel, for a long time the evidence did not appear to touch the prisoner at all, and he looked about him with the most perfect unconcern, seeming to think himself quite safe. At last, the surgeon was called, who stated that the deceased had been killed by a shot, a gun-shot, in the head, and he produced the matted hair and stuff cut from and taken out of the wound. It was all hardened with blood. A basin of warm

water was brought into court, and, as the blood was gradually softened, a piece of printed paper appeared—the wadding of the gun—which proved to be half of a ballad. The other half had been found in the man's pocket when he was taken. He was hanged."—*Twiss's Life of Lord Eldon*. This is probably the same case that is mentioned by Dr. Gordon Smith in his "Forensic Medicine," as having been referred to by the lord chancellor in the House of Lords during a debate in 1820.

T. R. B.

92. *Action of certain Essential Oils*. By PROFESSOR MITSCHERLICH.—From experiments on animals it appears that these oils pass into the circulation, and that they are eliminated by the lungs, and partly also by the kidneys. The following are some of the details, with the appearances on dissection, &c.

1. *Volatile oil of Mustard*.—It is a violent poison, and kills animals in a shorter space of time than any of those hereafter enumerated. It causes a local inflammation, not, however, very powerful, of the intestines, detaching the epithelium, but not causing any alteration in the arrangement of the cellular tissue. It is absorbed, and its odour allows of its presence being easily detected in the abdominal cavity and in the blood. It is partly rejected by the pulmonary exhalation, and, in this case, it communicates to the urine an odour of horseradish. In cases of poisoning by this oil the muscular irritability remains a long time after death.

2. *Volatile Oil of Savin*.—A violent poison, but does not kill so quickly as the oil of mustard. It is absorbed, and may be recognized by its odour in the abdominal cavity and in the blood. It is partly thrown off by the pulmonary exhalation, and partly also by the urinary secretion as its odour demonstrates. It occasions, even in mortal doses, very little change in the intestinal canal, and only congestion in the blood-vessels, which are distributed in the jejunum with a detachment of the epithelium. Its action on the veins is such, that, after death, these organs are gorged with blood; and, in one case, cylinders might be observed in the urine which were probably formed by the internal membrane of the urinary canals of BELLINI. The muscular irritability remains long after death, and the heart, whose cavities are gorged with blood, gives pulsations for a long time.

3. *Volatile Oil of Carraway*.—A violent poison, but weaker than the two last. It is absorbed, as is shown by its odour, in the abdominal cavity. It is partly thrown out by the pulmonary exhalation, but the urine does not give any indication of it. It determines changes of structure in the stomach and jejunum, but without producing inflammation in them, or even congestion of blood.

4. *Volatile Oil of Fennel*.—Poisonous, but less so than the preceding; absorbed and rejected in part by the lungs, but not by the urine. Its effects on the intestinal canal are similar to those from the oil of carraway.

5. *Volatile Oil of Turpentine*.—A much weaker poison than the four preceding. It is absorbed, passed out by the pulmonary exhalation, and, as is well known, gives a peculiar odour to the urine. In the experiments of Professor Mitscherlich, it did not cause inflammation of the stomach, but a very peculiar change in the structure of that organ, with a considerable detachment of the epithelium, and formation of bloody phlyctenæ. This detachment of the epithelium extends to the large intestines, (differing in this respect from the previous poisons;) and it is thus that it gives rise to purgation and to alvine evacuations of a mucous nature. —*Chemist*, July, 1844, from *Journal de Chimie Médicale*.

T. R. B.

93. *Legal Accountability of the Deaf and Dumb*.—The following extraordinary, because untrue, statement is made in the *Foreign Quarterly Review* for July, 1844:—

"It was under the Restoration, also, and in 1826, that, in the cases of Nadeau and Fillerou, both deaf and dumb prisoners, that Charles LEDRU, (in France,) first raised the question as to how far the penal law was applicable to a deaf and dumb person without instruction. This medico-legal question was treated by M. Ledru with great general ability and enlarged physiological views. Both prisoners were acquitted. Mr. Cockburn did not disdain to use many of the

arguments of M. Ledru in his able and ingenious defence of Daniel M'Naughten, at the Central Criminal Court."

It is quite sufficient to add that the subject in question was discussed with great ability before the Scotch Courts in 1807. T. R. B.

94. *Poisoning by Oil of Bitter Almonds*.—There is a substance sold by druggists, under the name of *Ratafia*, which consists of one drachm of the oil to seven drachms of spirit. Hence about seven drops of the essential oil of bitter almonds are contained in each drachm of *Ratafia*. It is used for culinary purposes—to flavour custards, &c. A child, eight years and a half old, took about a teaspoonful. Mr. Smith, of Clifton, was sent for immediately after the accident, and found no pulse in the arms, but the carotids beat quickly and fully. The face was of the usual tint, but the extremities were almost bloodless. There was no spasm of the extremities—the limbs were completely lax, the eyes closed, but the pupils dilated, and the jaws firmly clenched. No stertorous breathing. The eyes had a brilliant, glassy appearance, mere physical brilliancy without mental expression. Lastly, there was perfect insensibility.

Cold water had been thrown over the arms before the arrival of the physicians. A mustard emetic was given, and, immediately after, brandy and water, with aromatic spirit of ammonia. The last was repeated at short intervals; vomiting shortly followed of matters strongly smelling of Prussic acid. Spirits of ammonia were also rubbed on the chest. The pulse returned gradually in about twenty minutes, and after that the symptoms became more and more favourable until she completely recovered.—*Lancet*, June 8, 1844. T. R. B.

95. *Mesmerism!!*—Worship Street, London.—On Monday, a young man, named William Bowen, was charged at this office with stealing a linen sheet. The prisoner, who had a somewhat pensive expression of countenance, of a death-like paleness, was supported at the bar by a young man somewhat older than himself, and who was stated to be his brother; his eyes were entirely closed, and he had every appearance throughout the examination of being in a profound sleep. The police officer stated that he was sent for on Saturday night to a pawnbroker's, where he saw the prisoner, who had just before presented the sheet produced for pledge, and which, the pawnbroker suspecting had been stolen, had determined to give him into custody. The officer found that the sheet had been stolen from the prisoner's landlady, who was a laundress. Mr. Bingham, the magistrate, noticing the appearance of the prisoner, asked him if he understood the nature of the evidence against him. The prisoner took no notice of the question, but remained entirely motionless and silent, and seemed to be in a state of total insensibility. Mr. Bingham inquired if any one could give an explanation of the prisoner's extraordinary conduct. Sergeant Lambert said he could, partially. Almost immediately after the prisoner had reached the station on Saturday night, and had given a true description of himself, he appeared to receive a slight shock, and then fell into his present state of somnolency, in which he had remained ever since. No notice was taken of it for some time, thinking he might be sleepy, but as it at length became manifest that it was not the effect of fatigue, great alarm was excited lest he should be dying, and Mr. Coward, the divisional surgeon, was sent for and promptly attended, but after being with him a considerable time, went away, declaring he could do nothing for him. At length, one of the officers entered the station, to whom the prisoner's family was slightly known, and suspecting, from the circumstance of one of his brothers being a lecturer on mesmerism, that he might be in a mesmeric trance brought on by the position in which he was placed, the brother was sent for to get him out of it. On coming to the station, the brother expressed his inability, after a few experiments to relieve him, but entered into conversation with the prisoner, who answered the questions put to him readily, although he continued apparently in a sound sleep. The only question put by the brother at the station, that the sergeant could recollect, was as to when the prisoner felt he should come out of his trance, to which the answer was, as he

understood it, "Saturday week, eight in the evening," corresponding with the hour at which he was taken into custody. The prisoner had not taken the slightest nourishment, either liquid or solid, since he had been locked up, nor expressed a wish, either verbally or by gesture, for any thing. Mr. Bingham said, that under these circumstances, he should remand the prisoner. The prisoner was then supported out by his brother and one of the officers, but in precisely the same state as when he entered the room.

The young man was again brought up on Tuesday, and having then recovered from his state of mesmeric coma, the case was gone into and satisfactorily proved. A person who stated himself to be the prisoner's brother, stepped forward, and, with great gravity, said his brother was a person peculiarly susceptible of the influence of mesmerism. If he looked steadfastly at any particular object, he was sure to be thrown into a state of mesmeric coma, which deprived him of the use of his natural senses. The mesmeric influence operated in different ways upon him, for, on a former occasion, when the prisoner was so affected, he manifested a disposition to destroy every thing that came in his way, and his friends were obliged to put him under restraint. His late visitation was produced by some object to which his attention was riveted last Thursday evening at the Surrey Theatre, and his friends, who observed the fit approaching, exerted themselves without effect to avert it, as they knew that he was unconscious of what he did when under its influence. *It was urged that the prisoner was in a state incapable of judging between right and wrong when the offence was committed.* Mr. Bingham could not listen to such an excuse. He required the prisoner to pay a fine of 20s. for unlawfully pawning the property, and also 2s., the amount received upon it, or be committed in default for 21 days to the House of Correction.—*London Atlas*, Feb. 24, 1844. T. R. B.

96. *Manchineel Tree*.—"The common stories about the fatal shade of this tree are as fabulous as the changing colours of the dying dolphin. The *shade* is as harmless as any other shade. The fact is, the juice of the manchineel is highly corrosive and easily extracted, so that rain water or heavy dew will contract upon the leaves or branches so much of the poison as would certainly blister any flesh it fell upon. The manchineel is very fine timber, and the negroes usually smear themselves over with grease when they are about to fell it. It is also a common trick with them to blister their backs with the juice in order to excite the compassion of those who mistake it for the effects of beating."—*Henry N. Coleridge's Six Months in the West Indies*. T. R. B.

MISCELLANEOUS.

97. *Vaccine Virus*.—M. JAMES, in a memoir read to the French Academy of Sciences on the 8th of July last, maintains that the renewal of the vaccine virus at remote periods is far from being so advantageous as the regeneration of the virus. In fact, he remarks, although the spontaneous appearance of cow-pox in the cow is by no means so rare as has been supposed, we are never certain of being able to meet with it at the moment we want it, and on the other hand it is known that the first vaccinations with virus from the cow expose to accidents of which the early vaccinators frequently complained. These inconveniences do not present themselves when the virus is regenerated, a method which consists in returning the virus to a heifer, after transmitting it through a few human systems, and then taking it from this animal and employing it for a new series of human beings. This method, he asserts, preserves the virus in its necessary degree of activity, to protect the system effectually from small-pox, without exposing to the accidents which occur when the virus is taken directly from its source. M. James claims to be the originator of this suggestion.—*Comptes Rendus*, July 8, 1844.

AMERICAN INTELLIGENCE.

ORIGINAL COMMUNICATIONS.

Anaplastic Operation for the removal of a deformity caused by a hole in the forehead left by syphilitic necrosis of the whole external table of the os frontis. By JOHN WATSON, M. D., one of the surgeons of the New York Hospital.

Hugh McCabe, a native of Ireland, a carpenter aged 42, was admitted into the N. York Hospital, April 19th, 1844, with necrosis of the os frontis of six years' standing, probably the result of syphilis which he contracted some twenty years ago, but of which for many years past he had supposed himself entirely cured. According to his own account, the disease on the forehead was the result of a local injury.

At the date of admission, a large ulcer, exposing a considerable portion of the os frontis, existed on the forehead. The greater part of the external table of the bone had already exfoliated, and was held in place merely by the over-lapping of the soft parts. A fistulous opening existed at the upper border of each orbit, and another on the left temple, and through these there was a considerable flow of purulent matter. The upper eyelids were somewhat elevated and deformed by adventitious adhesions around these fistulæ.

A few days after admission, the exfoliated portion of bone was removed by Dr. J. K. Rodgers, who, in order to effect this removal, was obliged to increase the size of the opening by a short incision in the scalp at the upper and left angle of the ulcer. The undermined integuments, now deprived of support, rolled in upon themselves, turning a portion of the hairy scalp inwards upon the face of the sore, and adhering in this folded form along the left border of the ulcer.

On the 1st of June, the date at which I took charge of the case, the central portion of the ulcer appeared to be covered by a sort of cuticular cicatrix. The whole aspect of the forehead was exceedingly disgusting. The cavity was about two inches and a half wide in its shortest diameter; its borders were rugged, abrupt and irregular. A portion of diseased bone lay still exposed and adherent near the upper and right angle of the opening, another under the fold of integuments along the left border. A deep sulcus, exposing some points of diseased bone, existed above the root of the nose. The left frontal sinus was exposed to view, and the rim of bone along its outer and lower boundary was carious. From these several points of diseased bone there was a free discharge of purulent matter. The patient's general health was good. After deliberating for some time on the case, finding the internal table of the bone unaffected, and all the carious portions apparently within reach, I advised the patient to submit to an operation, with a view of removing the diseased bone, and of closing the cavity in the forehead. To this he readily acceded, and the operation was accordingly undertaken on the 27th of July.

After shaving the scalp, and removing the cuticle from the centre of the ulcer by washing it with concentrated aquæ ammoniæ, the operation was

commenced by unfolding the integuments along the left border of the ulcer. This required the free use of the scalpel. A small fragment of bone, which lay buried in this fold of skin, was removed during this first step of the operation.

The next step was to carry the point of the knife completely around the circumference of the opening, and through the whole thickness of soft parts; and to remove a strip of integument varying from an eighth to a quarter of an inch in width throughout the whole of this extent; thus making a smooth and thickened border for the subsequent adjustment of the flaps.

The third step consisted in raising two large quadrilateral flaps, the one on the left and the other on the right side of the opening in the forehead. This was effected by four incisions running somewhat horizontally backwards, nearly parallel with each other, two on each side; one from each upper, the other from each lower angle of the opening;—and afterwards detaching the flaps from the periosteum.

The fourth step consisted in the removal of the diseased portions of bone as far as they could be detected. This was effected mostly by the cutting pliers. The largest of these portions was the projecting rim of bone at the left frontal sinus, the removal of which caused a slight depression over the left orbit. The hemorrhage which had hitherto been rather free, was now checked by the application of ligatures to such vessels as required them. The most obstinate point of issue was from the minute vessels of the glabella, where ligatures were out of the question.

The fifth step was an attempt to approximate the lateral flaps so as to cover the opening. This, however, could only be partially effected. They could be made to meet only to the extent of an inch from their lower edges, even after considerable stretching. The parts thus approximated were secured by two sutures. A large V like gap still existed in the upper part of the forehead.

The next step consisted in an attempt to fill this by a flap from the top of the scalp. For this purpose a free incision was carried from near the upper and right angle of the ulcer, in a curved direction towards the crown of the head. The flap thus made was dissected up and then partially rotated so as to bring its lower and right angle downwards on the centre of the forehead. In this way the remaining deficiency of integument was effectually supplied. The approximated edges were now brought into exact adaptation along the whole of the lines of incision, by numerous points of suture. No part of the wound was left gaping. The sutures were strengthened by strips of adhesive plaster, and the forehead was covered with a compress and bandage.

The patient suffered comparatively little subsequent to the operation. During the greater part of the first week he was kept on a restricted diet. The dressings on the forehead were kept wet with cold water. This had no effect in detaching the adhesive straps, and was exceedingly grateful to the patient. The first dressings were removed on the sixth day. About three-fourths of the lines of incision had united by the first intention. A few of the sutures were removed and the wound was dressed as before. At the second dressing, on the 9th or 10th day, cicatrization had progressed somewhat further. The lower angle of the upper flap had not adhered, and it had receded somewhat, so as to leave a small gap about the size of

a shilling in the middle of the forehead. All the remaining sutures were now removed, and replaced by simple adhesive straps.

Subsequent to this period, although the central gap increased slightly in size, the integuments around it became attenuated and cicatrized firmly to the parts beneath, so as to leave very little depression. The patient left the hospital about five weeks after the operation, at which period the wound had entirely cicatrized with the exception of a pupillary opening which communicated with a small point of carious bone that had escaped notice during the operation, and that had not yet exfoliated. This opening was at the upper and right angle of the original cavity, and was seated on the hairy scalp, so that as the hair grows it will become entirely hidden, provided it is not soon allowed to cicatrize by the exfoliation of the point of bone beneath it.

Case of Extirpation of a Fibrous Tumour by the large peritoneal section. By WASHINGTON L. ATLEE, M.D., of Lancaster, Pa., Professor of Medical Chemistry in the Pennsylvania Medical College, Philadelphia. [Extract from a letter to the Editor.]

"Dear Sir:—In accordance with your request I herewith transmit a few hasty notes of the cases referred to while in Philadelphia a few days ago, with a promise that they will be reported in detail for the January No. of your Journal.

"Miss P, a highly respectable and intelligent lady, aged 24 years, residing in Coleraine township, Lancaster county, called upon me in June last. After examining the patient myself, and in company with my brother, at different times, I informed her of the practicability of an operation, and advised her of all its dangers. She came to Lancaster on the 26th of August to have the tumour extirpated, and I performed the operation on the 28th ensuing. The incision extended from the umbilicus to the pubis, being 7 or 8 inches long. Most of the small intestines, 10 or 12 inches of the transverse colon, and a large portion of the omentum gushed out, which, in connection with violent retching, gave us a great deal of trouble in the subsequent steps of the operation. The tumour, having no adhesions, was soon dislocated and thrown out upon the abdomen; but was found to be almost sessile upon the right side of the uterus, and adhering to it by a solid, resisting, and highly vascular pedicle, about $1\frac{1}{2}$ or 2 inches thick and $1\frac{1}{2}$ inches long, diminishing as it approached the uterus. This was properly secured with strong ligatures—the tumour severed—the intestines returned—the wound closed with 15 hare-lip sutures, and the patient put to bed. Acute peritonitis supervened, which was overcome by venesection, vesication, leeching, laxatives and enemata. Some of the ligatures came away on the 8th of this month, and all the rest on the 18th. On the 15th the patient commenced riding out, and has continued to take carriage exercise daily since. Her menses returned on the 17th, the exact time for their appearance. She has now quite recovered, and will leave for home, a distance of 24 miles, day after to-morrow. The tumour is very dense and solid, and of a fibrous character, and weighs 1 pound 13 ounces.

"My brother's operation, performed last Friday, is likely to be successful. He will write to you in a few days."

Lancaster, Sept. 23, 1844.

Case of Anasarca, from Disease of the Heart.—First sound only heard. Autopsy—Hypertrophy of the left Ventricle, with Ossific and Cartilaginous Depositions in the Aortic Valves. By GEO. SPACKMAN, M. D.

J. W., a tavern keeper, aged 56, of temperate habits, sallow complexion, medium height; a stone-mason by trade, which he followed until the last fifteen years, of remarkable strength, and accustomed to lift great weights, applied to me in the middle of June, 1843, complaining of palpitation and difficulty of respiration on exertion; also of loss of appetite and occasional pains in the epigastric region, some pain in the right side, and some tenderness on pressure over the stomach; no œdema. He never complained of headache, his urinary secretions were apparently healthy, but his pulse was irregular, labouring and slow. He was at this time attending daily to his business. Never had the rheumatism to his knowledge, but was subject to constipation and flatulency. Percussion over the præcordial region gave a dull sound, and the impulse of the heart was very strong, but percussion over the lungs imparted no peculiar sound to the ear. Upon applying the stethoscope to the left side of the chest, between the third and fourth ribs, a rasping sound was heard; on the sternum, opposite the cartilages of the third ribs, the first sound was rough, rasping and whizzing, but the second sound of the heart was inaudible. These sounds were heard along the course of the carotids; the abnormal sounds and impulse were of a very singular character, and reminded an observer of the "sounds produced by the struggling of a drowning animal." At the apex, the sounds were diminished in intensity, but no second sound existed. Calomel and rhubarb were ordered in a cathartic dose, with five drops of tinct. digitalis every three hours, rest, and light diet. The patient himself looked upon his case as one of dyspepsia and organic disease of the heart. Two days after he was much better; had less palpitation, and his pulse was not so full, but it was irregular and intermittent. I directed him to eat beef, mutton and rice, and drink cold water, and left the following prescription:—R. Rad. gentianæ, ʒjj; Rad. valerianæ, ʒss; Bicarbonate of soda, ʒiii; Aquæ bullientis, Oj.—Misce. A wineglassful to be taken after each meal. I also directed him to keep his bowels open with rhubarb. At this time he could go up and down stairs with but little difficulty of breathing, and slept with his head moderately low. I did not see him again until I was sent for on the 2d of July, when I found him complaining of pain in the region of the heart, great soreness in the epigastrium, and cough, with mucous expectoration, tinged with blood.

I had him cupped over the region of the heart and stomach, but did not bleed him, for venesection seemed to be contra-indicated by the irregularity and feebleness of his pulse, and his pale, sallow, and even bloodless appearance. A blister was applied over the heart, and kept open; and, as the patient was much troubled with flatus and other dyspeptic symptoms, the treatment was directed again to that, because it seemed to be the most urgent, and resulted, as I believed, from the organic disease of the heart. He was ordered to take of the bicarbonate of soda, a small teaspoonful in a wineglassful of ginger tea, with ten drops of the aromatic spirits of ammonia, every three hours; also, small doses of mass. ex. hydrarg., gr. iii., at night, and rhubarb in the morning.

Being convinced that the disease was hypertrophy, with some disordered valvular condition of the heart, and that it was a fixed organic affection, which must, ere long, terminate in the death of my patient, I requested a consultation, and my friend, Dr. S. G. Morton, met me on the morning of the 6th, when, after a careful examination of the case, he pronounced it to be hypertrophy, with ossification of the valves of the aorta. He was particular in calling my attention to the blowing, rasping and thumping sounds; resembling the struggles of a drowning animal. Camphor tea and Hoffman's anodyne were directed, in conjunction with other remedies, to relieve the difficulty of respiration, and calm the spasmodic pain about the heart. From the 7th to the 15th, same medicines continued, when my patient thought himself better; heart not so active; soreness of epigastrium gone; bowels open; pulse irregular, but the rasping and blowing sounds of the heart still remaining, and the urine scanty, with a little œdema in the ankles. I ordered at this time, *Salis diuretici*, ʒij; *Sup. tart. potassæ*, ʒij; *Aquæ, oss.*—*Misce.* A tablespoonful to be taken every two hours, with the addition of thirty drops of sweet spirits of nitre. The same treatment was continued to the 21st, when he felt so much better that he took an excursion in a steamboat.

22d. Appetite improved; heart more calm; secretion of urine more copious; bowels costive, œdema increasing. I prescribed as follows:—*R. Pulv. jalapæ*, ʒj; *Sub. tart. potassæ*, ʒij. *Mft. pulv. No. vi.* One to be taken every three hours until they operate.

23d. Bowels well opened; feels better. 24th. Œdema increasing. Bandaged his limbs. Directed as a diuretic—*Nit. potassæ*, ʒii; *Bac. juniperi*, ʒxv; *Vini albi*, oj. A wineglassful morning and evening.

25th. Hardly any œdema; passes his urine in large quantity, and has little difficulty in breathing. He is cheerful, has a good appetite, still goes out and continues better. On the 29th he went to Cape May and did not return until the 8th of August, when his countenance and spirits were good; pulse unchanged; bowels regular; appetite improved; œdema greatly increased; thighs and ankles swollen very much, and he would not keep on the bandages; urinary secretions free; shortness of breath increased; some cough and bloody expectoration; bowels costive; palpitation greater, and the rasping and blowing sounds augmented. The patient remains in the house, sitting in the rocking chair, and finds great difficulty in getting up stairs.

30th. Dr. Morton saw him in consultation with me. Cannot lay down at night; œdema extending; bowels constipated; urine scanty; pulse irregular; sounds of the heart the same; cough the same, with bloody expectoration, and appetite bad. Dr. M. directed hydriodate of potassa, gr. iv. to the ounce. A teaspoonful three times a day; a blister to be applied again over the region of the heart and kept open.

Aug. 3d. Œdema increasing; cannot lay down, but sits up all night in a chair, leaning forward; sleep disturbed. No change results from the last medicine. There appears to be no chance of relief and death must soon close the case. I ordered laxatives to keep the bowels open, camphor-tea and aromatic spirits of hartshorn, to act as nervine stimuli; tincture of hyoseyamus in doses of fifty drops, to allay pain and produce sleep, and allowed the patient to eat what he found best to agree with him, and have porter and milk-punch if he wanted it. All active treatment was abandoned and the case left to nature.

Sept. 2d. Skin cold, hands blue, pulse small; has passed no urine for twenty hours and doses all the time. His limbs are enormously œdematous, the centre of the thigh measuring twenty-two inches around. He died, sleeping, without a struggle, at half past eleven, P. M.

Post-mortem examination.—Present, Drs. Morton, Spackman and McCloskey.

External appearances.—Great emaciation, except in the lower extremities, where we found extensive œdema. Chest high and fuller on the left side than on the right.

Pericardium thickened, contained a quart of citron-coloured fluid, devoid of flocculi; *heart* nearly three times the natural size; some chronic adhesions of the *pleura*; semilunar valves ossified; ventricles much enlarged; the parietes of the right in a state of atrophy, that of the left, hypertrophy, being nearly an inch in thickness. The structure was very pale but remarkably dense; the *columnæ carneæ* very large, and the auricles slightly affected. The *liver* was large and engorged, and gave a grating sensation on cutting; and the *bladder* very much distended.

Remarks.—The preceding case is interesting, from the fact of the existence of a cardiac lesion of great extent unattended by any pain or any great dyspnœa; the only complaint of the patient being of such symptoms as attend upon dyspepsia. To the symptoms of dyspepsia, after existing many years, were superadded palpitations of the heart, and then, for the first time, the cardiac symptoms attracted attention. The case is also interesting as being one which had not been preceded by rheumatism, which, in a vast majority of cases, lays the foundation of cardiac disease. The granular state of the liver is interesting as marking the intimate connection of that organ with the central organ of the circulation.

It will be observed that but one sound of the heart was heard, viz., the first or systolic, the state of the aortic valves being inflexible in consequence of the cartilaginous and ossific deposits in their structure. The absence of the second sound is strong confirmatory evidence of the fact, that the second cardiac sound is due to the closure of the aortic orifice by the arterial column of blood falling back upon the valves during the diastole of the heart.

DOMESTIC INTELLIGENCE.

Alcoholic odour of the fluid in the ventricles of the Brain.—Dr. BRADLEY, of Illinois, was summoned before a coroner's inquest, held on the body of Samuel Page, as a medical witness. The deceased was found about two miles from the village, in his wagon, with his feet hanging over the foreboard, his body resting upon a bag of grain, and his head upon the bottom of the wagon. He was totally insensible, and his breathing stertorous and difficult. He was taken to a neighbouring dwelling, where he died in about ten minutes. He had been drinking very freely for several days previous, but was not an habitual drunkard. He had left a grocery store a short time previous to being found, partially intoxicated, without mittens or any other "extra over-clothes," though the weather was somewhat below the freezing point.

On dissection, six hours after death, dark fluid blood poured forth from the

sinuses of the brain, to the amount of eight or ten ounces. The brain exhibited excessive vascular turgescence; in the corpora striata, a small amount of sanguineous extravasation was detected, and in the lateral ventricles some serous effusion. Verdict, "death from apoplexy caused by intemperance."

The effused fluid found in the ventricles yielded strongly the alcoholic odours. This was so apparent, that it was readily recognized by every member of the jury.—*Illinois Med. and Surg. Journ.* T. R. B.

Case of extensive Fracture and Depression of the Skull in which the patient recovered. By D. C. SMYLEY, M. D., of Pleasant Hill, Ala. (*Western Journ. of Med. and Surg.*, Aug., 1844.)—The subject of this case was a mulatto girl, not quite 8 years of age, who was wounded Jan. 24th, by the falling of the limb of a tree. She was seen by Dr. S. a few moments after the accident, when she was lying on the ground, apparently dead; the heart beat feebly at intervals. The left half of the frontal bone, except a small part which aids in forming the external angle of the eye, was driven in upon the brain, the superciliary ridge pressing down immediately over the eye; the upper portion of the left parietal bone was also fractured and depressed; the fracture was three inches in width, taking the sagittal suture as its upper line, and extending over a part of the occipital bone. Dr. S. first elevated the superciliary ridge, and restored it to its place. This being done, the patient, for the first time, was seen to breathe. She was then taken to the house where dry clothing was provided. Her head, in the next place, was shaved, and reaction having come on to some extent, the depression began to disappear, the contents of the skull forcing out the fragments of bone, which were greatly comminuted. Sinapisms were applied to her extremities, which remained very cold. Her pulse was irregular in volume and beat. She was unable to swallow.

25th. Patient lay in a stupor all night; extremities still cold; considerable vomiting has taken place, with a large discharge of bile; pulse still irregular, and about 87 in the minute. To-day she is able to swallow. Gave three small doses of calomel and Dover's powder in the evening, and ordered an injection during the night.

26th. Rested badly last night; pulse 90, but not quite so irregular. Had two alvine evacuations early this morning, which were decidedly bilious. For the first time had a discharge of urine. Extremities have become warm. Before Dr. S. arrived this morning, half an ounce of blood had been taken, by which rigors were near being brought on. In the evening small portions of morphine and muriate of ammonia were given, which prescription was continued regularly throughout the treatment.

27th. Rested a little last night; skin quite pleasant; pulse 96, and becoming more regular. The head has become much swollen and puffed out, except immediately over the superior posterior angle of the parietal bone. In the evening the patient began to evince some return of intellect. Directed two small doses of calomel and Dover's powder during the night.

28th. Part of the night patient rested well; had one evacuation early this morning; pulse more natural, but still 96. In the evening gave a dose of Epsom salts.

29th. Patient rested very well; had two stools during the night; pulse almost regular at 93. In the evening the swelling and ecchymosis which had extended to both eyes began to abate; corn-meal gruel allowed for nourishment.

The patient continued to improve up to the 4th of February when she was dismissed cured. For six or eight weeks after this time she could not articulate distinctly, and even now cannot pronounce some words intelligibly.

On the day after the accident the wound was not much swollen, and on the slightest pressure with the finger over the fracture a crepitus was distinctly heard as between small pieces of bone. Not the slightest wound was inflicted upon the external teguments. The head on the injured side remains considerably flattened. The superciliary arch of the left eye is also somewhat depressed.

For about fourteen days incomplete paralysis of the right side existed, but has now disappeared. The mind appears clear, but the girl does not answer questions with the same promptness that was natural to her before the accident, and with this there is noticeable some languor in her bodily movements.

Extirpation of Os Coccygis for Neuralgia. By J. C. NOTT, M. D., of Mobile, Ala. (*New Orleans Med. Journ.*, May, 1844.)—The subject of this case, a lady about 25 years of age, had been suffering from derangement of her general health and neuralgia for 10 months before she came under Dr. Nott's care, at which time her condition was deplorable.

Suspecting that disease or displacement of the coccygis had become a source of irritation to one or more nerves in its vicinity, Dr. N. made an examination of the whole spine, and found no tenderness of any consequence until his finger touched the point of the coccyx, when the patient screamed with pain. Dr. N. then proposed extirpation of the bone, to which, the patient consenting, it was performed by making an incision down to the bone and extending from the point upwards of two inches. The bone was then disarticulated at the second joint, the muscular and ligamentous attachments divided, and without much difficulty, the two terminating bones were dissected out. The last one was found to be carious and hollowed out to a mere shell,—the nerves were exquisitely sensitive. The operation, though short, was attended with extreme suffering. For several hours after, the pains were extremely violent, coming on every 10 or 15 minutes, and accompanied by a sensation of bearing down like labour pains. Morphine in large doses, and other anodynes, afforded no relief—but the pains became gradually less frequent and less violent—the wound soon healed, and at the end of a month the local disease disappeared, and the general health was much improved.

About two months after the operation, she was seized a few days after her catamenial period with violent pains in the back, uterus, vagina, neck of the bladder, &c., but *none at the coccyx*; these pains continued for about four days, producing an extreme degree of suffering. Dr. N. gave anodynes internally—used anodyne injections into the vagina and rectum, but they seemed only to aggravate the symptoms. He tried fomentations, blisters, &c. &c., but nothing afforded the slightest relief, except injections of nitrate of silver into the vagina, and this was very partial; the attack seemed to pass off of its own accord. Similar attacks occurred after the two subsequent catamenial periods, and he was induced to suspect some organic lesion of the uterus. On examination, however, he found the uterus healthy, except a little morbid sensibility to the touch—there were, however, several points of the vagina (one the side and part next to the rectum), and the neck of the bladder, exquisitely sensitive, and when touched, she screamed and said these were the seats of her great suffering—when he touched them the pains would dart up to the loins, and all her aggravated suffering be produced. He was then led to the conclusion that these symptoms were all neuralgic and were consequences of the diseased coccyx. He put her on the use of citrate of iron, 5 grains three times a day, and continued it steadily on through the month—the next expected attack did not come on, and he continued the iron twice a day through the second month, when she passed over the second time, and I then discontinued the medicine.

When Dr. N. saw her last, she had been three months without an attack—her health, which was always delicate, had become pretty good, and she was riding about and taking her part in society as usual, after more than a year of seclusion.

Closure of Urethra from injury of the Perineum—urine discharged by artificial opening above pubes—natural passage restored by operation. By GURDON BUCK, M. D. (*New York Journ. of Med.*, Sept., 1844.)—The subject of this case was a boy 14 years of age, who, four months previous to admission into hospital, had fallen with his legs astraddle upon the edge of an empty flour-barrel. No external wound was produced, but swelling and ecchymosis of the perineum followed, with slight hemorrhage from the urethra and complete retention of urine. Thirty-six hours after the accident the bladder was punctured above the pubes,

and a quart of urine stained with blood was drawn off. The opening, which is still maintained, is situated in the median line, more than an inch above the pubes. Since the injury no urine has flowed from the natural passage, and the attempts to restore it have been ineffectual. With the exception of a knotted induration around the membranous portion of the urethra, the perineum is supple and sound. The orifice of the fistulous opening pouts out and is disposed to scab over; the tissues through which it passes are thickened and hard, and the surrounding surface red. The catheter used by the patient is one of his own fabric, made from the small end of a common reed, shaved down to the size of a goosequill, and is six inches in length. He is obliged to resort to it at least once in three hours, and sometimes as often as once an hour in the day time, and once or twice in the course of the night. When introduced, the instrument inclines a little upward towards the umbilicus. The bladder was ascertained, by examination per rectum, to be habitually distended with the residuary urine that could not be discharged through the elevated artificial opening. A catheter, introduced into the urethra, passed over a callous fold of the lining membrane before it reached the closed portion.

When admitted into the New York Hospital, Oct. 12, 1843, the patient was suffering from a relapse of tertian intermittent, which was cured by the sulphate of quinine. One month elapsed before an operation was resorted to, during which time cautious efforts were made to penetrate the closed passage.

A small-sized conical gum-elastic bougie was first used, but it could not be engaged in the contracted canal. A straight steel sound was next tried, with moderate force cautiously employed, but without effect. At length, on the 13th of November, the following operation was performed. The patient being secured as in the operation of lithotomy, and a full-sized catheter passed down to the closed portion of the urethra, and held steadily in that position, an incision was made in the perineum, along the raphe, of nearly two inches in length, opening into the urethra so as to expose the end of the instrument. A steel sound was then introduced above the pubes into the bladder by the artificial opening, and, with the aid of the finger in the rectum, the end of it was brought forwards and made to press against the closed portion from behind. The catheter was then withdrawn, and, with a narrow pointed scalpel, the closed portion was divided from before backwards, the end of the steel sound serving as a guide to direct the track of the incision. A full-sized catheter was at length passed into the bladder, and a large quantity of residuary urine drawn off, though he had made water just before the operation.

A compress was placed over the perineum and secured by a T bandage, to which the catheter was attached by threads passing through the rings. Special care was taken to attach the catheter loosely to the T bandage, so that there might be no pressure inwardly where the instrument begins to curve.

Inflammation and œdema of the scrotum followed the operation, but was subdued by saturnine lotions, leeches, punctures and incisions. The catheter was not disturbed until the third day after the operation, at which time inflammation had agglutinated the layers of the divided tissues, and shut off the openings in which the end of the instrument might become engaged in replacing it; the parts had also moulded themselves and acquired a degree of firmness, so that, in returning the catheter, it passed easily through them into the bladder. After the first removal, the catheter was changed every day or two, as the case required.

Dr. B.'s experience leads him to prefer decidedly a silver catheter to a flexible one, as giving more steadiness and support to the parts.

The wound above the pubes was closed on the 15th of December, and that in the perineum had healed on the 12th of January. For some time the patient had worn a full-sized catheter at night only, and he is now able to retain his urine the full time without dribbling. On taking his discharge, he was directed to continue the use of the catheter at night, in the same manner, for three or four weeks; after which, to wear it an hour only at bedtime as much longer, then to intro-

duce it simply once in twenty-four hours, and afterwards two or three times a week.

Epidemic Erysipelas in Delaware County, Pennsylvania. By JESSE YOUNG, M. D. (*Medical Examiner*, Sept. 7, 1844.)—Dr. Young states that during the spring and early part of summer of the present year, a severe form of erysipelas prevailed in Delaware Co., Pennsylvania. During a period of more than three months, scarcely a case of disease occurred in his practice or in that of several of his neighbours which did not, in some part of its course, manifest decidedly erysipelatous inflammation. It generally came on with the usual symptoms of catarrh; which frequently continuing some days before medical advice was sought, the patient would be attacked with a severe and protracted rigor, succeeded by fever and violent pains of the head, back and bones; with great restlessness and tossing about; the pulse, for the most part, less disturbed than could be supposed from the first sight of the patient; the tongue generally covered with a slimy-yellowish coat; clamminess of the mouth, which, in a few days, if the disease was not arrested, passed to a dry, brown, and in many cases verging to a black appearance.

There was mostly a remission of the fever, pain, &c., in the morning, but during the remission the patient would complain of extreme wretchedness, with considerable prostration of the vital powers. After this state continued three or four, and frequently seven or eight days, (but without any regularity in this respect,) an erysipelatous inflammation would become observable on some portion of the surface, often on the head and face, but frequently on the extremities or some part of the body. When it came out fully, and remained on the surface, the case was generally more manageable than when it made its appearance in patches for a short time, and then receded, which it was very apt to do. When this happened, the patients, I believe, rarely recovered. No matter what plan of treatment was pursued, the progress of the disease appeared to be onward; and the patient, after suffering almost indescribable torture, for perhaps ten or more days, sunk, worn out and exhausted by the efforts of nature to overcome her too powerful antagonist.

In these cases, when the efflorescence came to the surface and remained there, the patient generally got well, after a protracted course of treatment, varying from one week to three or four.

In the commencement of the epidemic, some practitioners made free use of the lancet; but this was afterwards discontinued from the fact, that some patients sunk rapidly after it; and in some others who ultimately recovered, the physician could not determine satisfactorily whether the bleeding was attended with any good, or whether it did not in reality do harm, by inducing prostration, which required all his energies and skill to overcome. All united in opinion, after becoming familiar with the disease, that venesection was a dangerous, or at least a very uncertain expedient.

The course of treatment found to be most efficacious was, emetics of ipecac. and tart. ant. combined; afterwards cathartics of calomel followed with jalap, or some other article in a few hours; and after free evacuations in this way, mild diluent drinks of whatever kind of herb teas was most convenient. Under this mild course of treatment, with the application of *raw cotton* to the inflamed surface, the patients were generally conducted to a safe and speedy cure.

Where, however, the physician was not called early, frequently it ran on from day to day until great prostration ensued, and sometimes the erysipelatous surface took on a dark, livid appearance, and gangrene, with extensive sloughing, ensued.

Here, tonics, with powerful stimulants, became necessary. But this state of things was not apt to result, if medical aid was solicited in the commencement, and the above-indicated anti-perturbating plan of treatment was at once instituted.

Quite an unusual number of deaths occurred among us, but the most of them took place in the early part of the epidemic.

Hare-Lip and its Treatment. By Dr. S. P. HULLIHEN, Wheeling, Va. (*American Journal and Library of Dental Science*, June, 1844.) Dr. H. is decidedly in favour of operating early on infants, and states that he has operated on thirteen cases before dentition had commenced; three infants of this number were only four weeks old; and he has yet to witness the first untoward event, or the slightest unfavourable indication resulting to an infant from the operation.

In all cases where hare-lip is accompanied with a cleft of the alveolar and palatine arches, he advises the following preparatory treatment for the purpose of restoring the alveolar arch to its proper form before attempting the operation for hare-lip. This treatment consists in the application of a strap of adhesive plaster, cut of such a shape as to cover each cheek, and with a narrow strip to pass over the lip. Each end should be left as large as the size of the cheek will permit, and slitted at different places, so that it may adhere smoothly and firmly. The part required to pass over the lip should be somewhat less than half an inch in width, the edges of this part being doubled over and fastened together, in order to give it the necessary strength and stiffness.

The strap may be applied in the following manner:—"After being properly warmed, one end should be quickly and well adhered to the cheek of one side, then, pressing both cheeks forward, and passing the strap over the upper lip, close to the nose, it should be adhered in like manner to the cheek of the other side. By thus confining the cheeks forward, a force is obtained and exerted upon the jaw, sufficiently great to close in a few weeks the widest cleft of the alveolar arch, and at the same time to correct any projections of its process. The strap should be kept perfectly tense. It is therefore necessary to tighten it every day or two, which may be done by cutting a small portion out of the narrow part, and then sewing it together, without disturbing its adhesions to either cheek. In this way, the same strap will last for several days, and is so easily tightened that its management may be safely entrusted to the parents of the child. As the wearing of the strap never excoriates the parts, nor produces the least pain to the infant, however young, it is advisable to apply it as soon after birth as possible, as a cleft in the alveolar arch is more easily closed at this period than at any other; and as the strap is always of very great assistance to the infant in taking its food. In cases of simple hare-lip, without any cleft in the alveolar arch, the use of the strap will enable the child to nurse at the breast with but little if any difficulty."

The time generally required to close a cleft of the alveolar arch, Dr. H. says, depends more upon the age of the infant than the size of the cleft. In a case in which the cleft was an inch in width, and where Dr. H. applied the strap the day after the birth of the child, the edges of the alveolar process were brought together in three weeks.

Needle in the Gall-bladder. By J. ALLEN TEBBETTS, M. D., of Andover, N. H. (*Boston Med. & Surg. Journ.*, Aug. 7, 1844.)—A boy, two years of age, who had previously been remarkably healthy, was attacked with abdominal disease, the exact character of which it is impossible to learn, so imperfectly is the case recorded, but which terminated fatally in about ten days. On examination after death, "the stomach and small intestines showed appearances of congestion, with slight inflammation. The spleen, pancreas, kidneys, bladder and large bowels, appeared perfectly normal. The liver was nearly twice as large as natural, highly congested, and also showing some appearances of inflammation. The gall-bladder was distended to more than twice its original size, with very dark-coloured bile, and containing a common sewing needle, highly polished, about one quarter part of its length (the pointed extremity) being gone. There was no appearance of the needle being corroded, the point merely showing signs of recent fracture. The inside coat of the gall-bladder was completely disorganized, from the inflammation which the needle probably produced. The examination of the brain and thoracic organs was not continued. When or how the needle came there is altogether unknown."

New volume of Professor Chapman's Lectures.—We are happy to announce that another volume of these valuable lectures has nearly passed through the press, and will be published in a few days. This volume contains lectures on the various exanthematous fevers, hemorrhages and dropsies, and on diabetes, gout and rheumatism. These are important topics, and they are undoubtedly ably treated.

The American Journal of Insanity.—This is the title of a Journal, the first No. of which was published in July last. It is edited by the officers of the New York State Lunatic Asylum, Utica, and its object is “to popularize the study of insanity—to acquaint the general reader with the nature and varieties of this disease, methods of prevention and cure.” It is to be issued quarterly, each number to contain 96 pages, subscription one dollar per annum.

The first number contains a brief notice of the New York State Lunatic Asylum, a paper on Insanity, illustrated by histories of distinguished men and by the writings of poets and novelists, and several other well-written articles.

Pennsylvania Hospital.—We learn from the annual report of this admirable Institution, that the whole number of patients during the year ending the 22d of April was 1011. The average number of patients maintained in the hospital during the past year has been 101, of whom 23 were pay, and 78 poor patients.

Of the poor patients admitted in this year, 298 were persons who had sustained accidental injury requiring surgical aid. Of this description were also 16 of the cases remaining in the hospital at the close of the preceding year.

Of the 938 patients admitted into the hospital during the past year, there were

	Males.	Females.	Total.
Infants born in the hospital, - - -	19	9	28
Under 18 years of age, - - -	78	30	108
Unmarried adults, - - -	376	74	450
Married, - - -	193	82	275
Widowers and Widows, - - -	37	40	77
	703	235	938

The number admitted into the Insane department was 279.

UNIVERSITY OF PENNSYLVANIA.

MEDICAL DEPARTMENT.—SESSION of 1844–5.—The Lectures will commence on Monday, the 4th day of November, and be continued, under the following arrangement, to the middle of March ensuing.

<i>Practice and Theory of Medicine,</i> - - -	NATHANIEL CHAPMAN, M. D.
<i>Chemistry,</i> - - -	ROBERT HARE, M. D.
<i>Surgery,</i> - - -	WILLIAM GIBSON, M. D.
<i>Anatomy,</i> - - -	WILLIAM E. HORNER, M. D.
<i>Institutes of Medicine,</i> - - -	SAMUEL JACKSON, M. D.
<i>Materia Medica and Pharmacy,</i> - - -	GEORGE B. WOOD, M. D.
<i>Obstetrics and the Diseases of Women and Children,</i>	HUGH L. HODGE, M. D.

A Course of Clinical Lectures and Demonstrations, in connection with the above, is given at the very extensive and convenient Infirmary called the Philadelphia Hospital. Clinical Medicine, by W. W. Gerhard, M. D.; Clinical Surgery, Drs. Gibson and Horner.

Clinical Instruction in Medicine is also given from the 1st day of November to the 1st day of March by Dr. Wood, in the Pennsylvania Hospital, an institution which is well known as one of the finest and best conducted Infirmarys in the United States.

Clinical Instruction is likewise given at the University, every Saturday morning.

The rooms for Practical Anatomy will be opened October 1st, and continued so to the end of March ensuing. They are under the charge of Paul Beck Goddard, M. D., Demonstrator, with a supervision on the part of Dr. Horner.

W. E. HORNER, M. D.,

August 1st, 1844. *Dean of the Medical Faculty, 263 Chesnut Street, Philadelphia.*

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JEFFERSON MEDICAL COLLEGE, SESSION OF 1844-45.

The regular Course of Lectures will commence on Monday the 4th of November, and end on the last day of February.

ROBLEY DUNGLISON, M. D., Professor of Institutes of Medicine, &c.

ROBERT M. HUSTON, M. D., Professor of Materia Medica and General Therapeutics.

JOSEPH PANCOAST, M. D., Professor of General, Descriptive, and Surgical Anatomy.

JOHN K. MITCHELL, M. D., Professor of Practice of Medicine.

THOMAS D. MUTTER, M. D., Professor of Institutes and Practice of Surgery.

CHARLES D. MEIGS, M. D., Professor of Obstetrics and Diseases of Women and Children.

FRANKLIN BACHE, M. D., Professor of Chemistry.

Lectures and Practical Illustrations will be given at the Philadelphia Hospital, one of the most extensive and valuable institutions in the United States, regularly through the Course, by DR. DUNGLISON, on Clinical Medicine, DR. PANCOAST, on Clinical Surgery, and at the Dispensary of the College, by Professors of the Institution.

The Dissecting Room will open on the first of October, under the Professor of Anatomy, and Clinical Instruction in Medicine and Surgery will be given at the Dispensary of the College.

R. M. HUSTON, M. D., Dean of the Faculty.

No. 1 Girard St.

MEDICAL COLLEGE OF THE STATE OF SOUTH CAROLINA.

The regular course of Lectures in this Institution will be resumed on the second Monday in November.

<i>Anatomy</i> , - - - - -	by J. E. HOLBROOK, M. D.
<i>Surgery</i> , - - - - -	" E. GEDDINGS, M. D.
<i>Institutes and Practice of Medicine</i> , - - -	" S. HENRY DICKSON, M. D.
<i>Physiology</i> , - - - - -	" JAMES MOULTRIE, M. D.
<i>Materia Medica</i> , - - - - -	" HENRY R. FROST, M. D.
<i>Obstetrics</i> , - - - - -	" THOMAS G. PRIOLEAU, M. D.
<i>Chemistry</i> , - - - - -	" C. U. SHEPARD, M. D.

The school for Practical Anatomy has been reorganized, and will be under the charge of Prof. Holbrook, assisted by Drs. Desaussure, Chazal, Sinkler, Gaillard, and Ravenel.

Clinical Instruction at College Hospital, Marine Hospital and Almshouse.

HENRY R. FROST, *Dean*.

MEDICAL COLLEGE OF GEORGIA.

The annual course of Lectures in this Institution will commence on Monday, the 11th of November next.

<i>Anatomy</i> , - - - - -	GEO. M. NEWTON, M. D.
<i>Surgery</i> , - - - - -	PAUL F. EVE, M. D.
<i>Institutes and Practice of Medicine</i> , - - -	LEWIS D. FORD, M. D.
<i>Materia Medica and Therapeutics</i> , - - -	J. P. GARVIN, M. D.
<i>Obstetrics, and Diseases of Women and Infants</i> , -	J. A. EVE, M. D.
<i>Physiology and Pathological Anatomy</i> , - -	L. A. DUGAS, M. D.
<i>Chemistry and Pharmacy</i> , - - - - -	ALEX. MEANS, M. D.
<i>Demonstrator of Anatomy</i> , - - - - -	H. F. CAMPBELL, M. D.

Clinical Lectures will be delivered at the City Hospital, which has been placed under the control of the Faculty.

GEORGE M. NEWTON, M. D., *Dean*.

AUGUSTA, Sept. 1844.

MEDICAL DEPARTMENT OF THE COLUMBIAN COLLEGE.

The annual course of Lectures in this Institution will commence on the first Monday in November, and continue until the first of March.

During this period full courses will be delivered on the various branches of medicine by

THOMAS SEWALL, M. D., *Professor of Pathology and the Practice of Medicine.*

HARVEY LINDSLEY, M. D., *Professor of Obstetrics and the Diseases of Women and Children.*

THOMAS MILLER, M. D., *Professor of Anatomy and Physiology.*

JOHN M. THOMAS, M. D., *Professor of Materia Medica and Therapeutics.*

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CHARLES G. PAGE, M. D., *Professor of Chemistry and Pharmacy.*

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The Infirmary will be opened as soon as the necessary arrangements can be made; the accommodations are sufficiently extensive for a large number of patients. Patients from the city or country will be admitted upon paying a very small sum to the Steward for board; the medical attention of the faculty will be furnished gratuitously; clinical lectures will be given daily. The Dispensary for the poor of the city will continue to be opened daily, between the hours of 9 and 10 A. M.

W. P. JOHNSTON, M. D., *Dean.*

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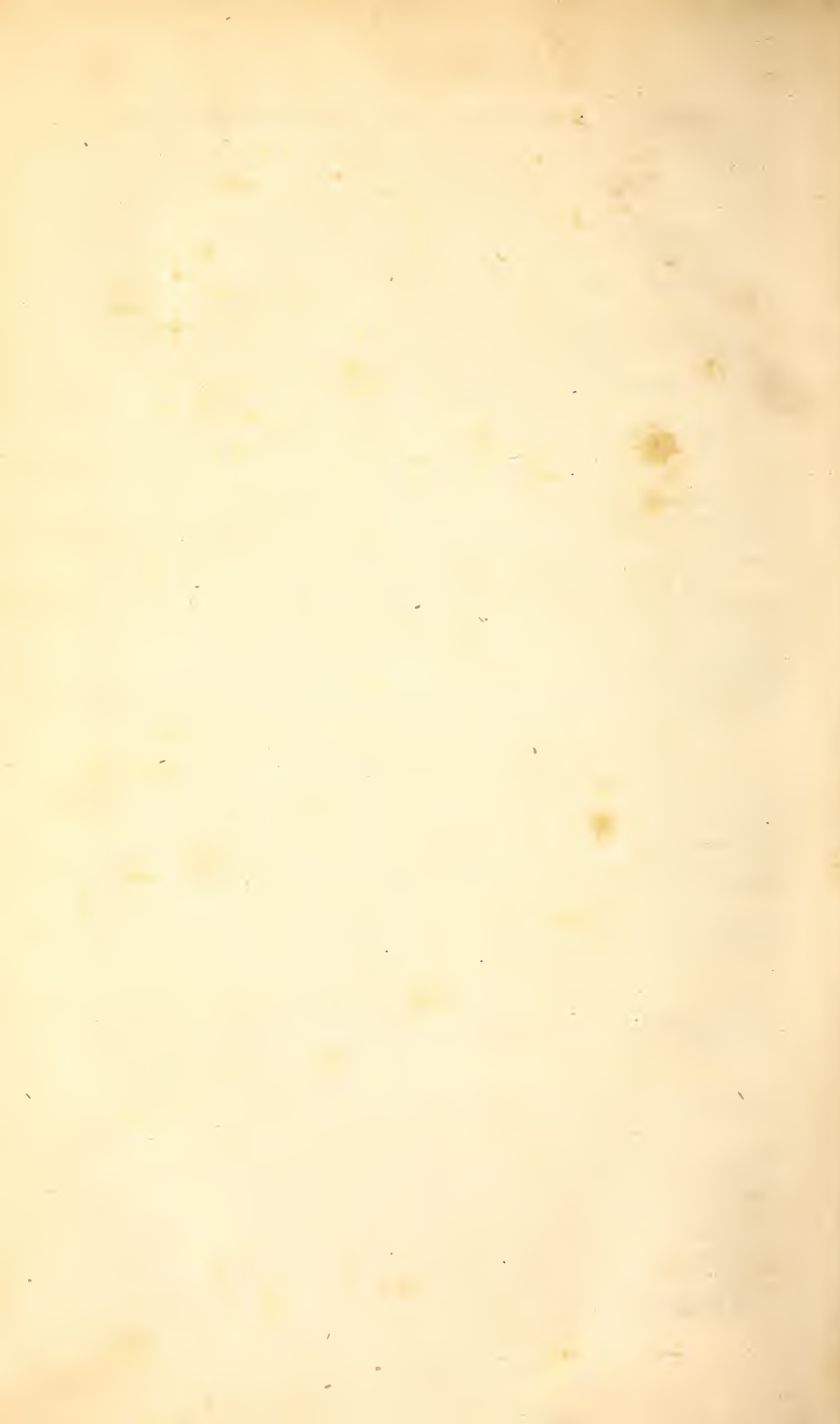
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